

Wyoming Department of Education Required Virtual Education Course Syllabus

Sheridan County School District # 1

Program Name	Sheridan County School District #1 Virtual School	Content Area	VE
Course ID	AC17056	Grade Level	9 - 12
Course Name	HVAC-R I	# of Credits	1
SCED Code	17056G1.0012	Curriculum Type	Acellus

COURSE DESCRIPTION

This Heating-Ventilation-Air Conditioning-and Refrigeration course, filmed in 3-D, provides students with a basic foundation of knowledge and skill required for a career in the HVAC-R field. It is the first in a two-part course of study preparing students for HVAC–R certification. Acellus HVAC-R I is A-G Approved through the University of California.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
CV12.1.1	College and career-ready students evaluate current knowledge and interests in order to set career goals.
CV12.1.2	College and career-ready students explore careers including outlook, salary, needed training, duties and lifestyle utilizing all available resources including mentors and industry experts.
CV12.1.3	College and career-ready students prepare an educational and career plan to enable them to gain desired knowledge and experience.
CV12.1.4	College and career-ready students demonstrate employability skills that enable them to be responsible and contributing citizens and employees.
CV12.2.1	College and career-ready students communicate clearly, effectively, and with reason.
CV12.2.2	College and career-ready students identify and model integrity, ethical leadership and effective management skills.
CV12.2.4	College and career-ready students apply safe, legal, and responsible use of information and technology as appropriate to the task.
CV12.3.2	College and career-ready students identify trends, forecast possibilities, and explore complex systems and issues.
CV12.3.3	College and career-ready students employ valid and reliable research strategies and apply prior knowledge to solve a problem or complete a project.
CV12.3.4	College and career-ready students demonstrate creativity and innovation while considering the environmental, social, and economic impacts of decisions.
CV12.4.1	College and career-ready students produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (*CCSS W.11.4)
CV12.4.2	College and career-ready students determine the meaning of symbols, key terms, and other content-specific words and phrases as they are used in technical context. (*Adapted from CCSS RL.9.11)
CV12.4.3	College and career-ready students acquire, manipulate, analyze, diagnose, and/or report information, using the appropriate technology.
CV12.5.1	College and career-ready students manage resources to develop, analyze, and implement systems and applications.
CV12.5.2	College and career-ready students productively complete tasks taking constraints, priorities and resources into account.
CV12.5.3	College and career-ready students safely and ethically use current industry-standard tools and emerging technologies.
CV12.5.4	College and career-ready students utilize technology to develop innovative solutions or products.

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1 – Introduction to HVAC-R	CV12.1.1; CV12.1.2; CV12.1.3; CV12.2.4; CV12.4.2; CV12.4.3;	In this introductory unit, students will learn about the meaning and history of HVAC-V as well as the role of HVAC-R technicians.
Unit 2 – HVAC-R Career Opportunities	CV12.1.4; CV12.2.1; CV12.2.4; CV12.4.2; CV12.4.3;	Students will learn about the various responsibilities of employees in an HVAC-R setting.
Unit 3 – Tools of the HVAC-R Trade	CV12.1.4; CV12.2.1; CV12.2.4; CV12.4.2; CV12.4.3; CV12.5.1; CV12.5.2;	Students will be exposed to various tools of the trade along with their proper and safe operation.
Unit 4 – HVAC-R Safety	CV12.1.4; CV12.2.1; CV12.2.4; CV12.3.2; CV12.4.2; CV12.4.3;	In this unit, students will learn safety guidelines and practices for the jobsite.
Unit 5 – Basic Electrical for HVAC-R	CV12.1.4; CV12.2.1; CV12.2.4; CV12.4.2; CV12.4.3;	Students will study and analyze electrical theory and concepts in this unit.
Unit 6 – Thermodynamics	CV12.1.4; CV12.2.1; CV12.2.4; CV12.4.1; CV12.4.2; CV12.4.3; CV12.5.1; CV12.5.2;	Students will learn about heat transfer, sub-cooling, and refrigeration concepts in this unit.
Unit 7 – Major HVAC-R Components	CV12.1.4; CV12.2.1; CV12.2.4; CV12.4.2; CV12.4.3; CV12.5.4;	In this unit, students will study compressors, metering devices, and coils.
Unit 8 – Introduction to the Refrigeration Cycle	CV12.1.4; CV12.2.1; CV12.2.4; CV12.3.2; CV12.4.2; CV12.4.3;	Students will build on prior knowledge in this unit as they learn to identify refrigerant lines and learn to make trade specific calculations.
Unit 9 – Introduction to Heating	CV12.1.4; CV12.2.1; CV12.2.4; CV12.4.2; CV12.4.3; CV12.5.3;	In this unit, students will learn more about combustion and heating.
Unit 10 – Copper Tubing and Plastic Pipe	CV12.1.4; CV12.2.1; CV12.2.2; CV12.2.4; CV12.4.2; CV12.4.3; CV12.5.3;	Students will study various types of tubing along with their proper application and handling.
Unit 11 – Soldering and Brazing	CV12.1.4; CV12.2.1; CV12.2.2; CV12.2.4; CV12.4.2; CV12.4.3;	Students learn about the tools and techniques for soldering, brazing, and preparing fittings.
Unit 12 – Refrigeration	CV12.1.4; CV12.2.1; CV12.2.4; CV12.3.4; CV12.4.2; CV12.4.3;	In this unit, students learn about refrigeration controls, typical service, and defrost cycles.
Unit 13 – Scheduled Maintenance A/C & Furnace (Residential)	CV12.1.4; CV12.2.1; CV12.2.2; CV12.2.4; CV12.3.3; CV12.4.2; CV12.4.3;	Students will learn how to clean blower assemblies, clean coils, and check air conditioning systems.