PROGRAM PROPOSAL FORM

☒ **Preliminary Approval** – Check here when using this form for preliminary approval of a program proposal, and respond to the items in general terms.

☐ **Final Approval** – Check here when completing this form after the Vice President for Instruction has given preliminary approval to a program proposal. For final approval, complete information must be provided for each item.

Program Name:	Sustainable Technologies in HVACR	**Program Code:** APSTH
Division and Department:	VCT / UASD	
Type of Award:	☐ AA ☐ AS ☒ AAS ☐ Cert. ☐ Adv. Cert. ☐ Post-Assoc. Cert. ☐ Cert. of Comp.	
Effective Term/Year:	Winter 2009	**CIP Code:** 46.0502
Initiator:	Dan Welch	

Program Features

Program's purpose and its goals.

Criteria for entry into the program, along with projected enrollment figures.

Connection to other WCC programs, as well as accrediting agencies or professional organizations.

Special features of the program.

This program is directed to HVACR journeymen looking to complement their training status with an AAS degree.

Admission Requirements: These students will have 32 college credits from completion of a UA apprenticeship or passing the UASTAR exams.
Note: The long-range plan is to open this program to non-UA members who have passed HVACR Excellence or NATE exams equivalent to the UASTAR exam.

Target Student: Initial marketing will be aimed at employees of UA partners such as Johnson Controls and Carrier. Candidates for this program are working professionals in the HVACR field with documented experience equivalent to a UA standard apprenticeship. This program is directed at over 20,000 UA journey status service technicians.
There will also be a marketing effort aimed at fifth year apprentices who are about to achieve journeyman status. This is an online distance learning program marketed to students across the US and Canada.

Connection to WCC Programs: This program articulates with the WCC HVACR department. Coordination between the UA and WCC will occur through third party NATE and HVACR Excellence testing, with the hands-on portions of the testing taking place on WCC's campus. The UA will identify and recommend students and WCC will verify their skills.

Program Goals:
This program will:
Enable students to manage customer relations in a professional manner
Prepare students to work in advanced commercial building controls
Prepare students to pass the national Green Awareness certification test given by the Green Mechanical Council.

Need Need for the program with evidence to support the stated need.	There are several factors that led to the creation of this program: 1. The UA and WCC needed to create a program to serve the over 20,000 service techs in the UA who have 32 or more college credits from their apprenticeship and are candidates for an associate degree program. These service techs work in an environment different from the large construction projects covered in our existing Construction Supervision Program (UAS). For example, service techs need more specialized training on customer relations, emerging green energy, and building control systems. 2. Johnson Controls and other national employers asked the UA HVACR department to work with the UA to articulate UASTAR certification and employer courses into an AAS degree program. The UASTAR program already leads into WCC credit programs, so it was a natural relationship. 3. The UA and national employers see a specific HVACR degree for service techs as an important benefit to employees who are continually updating their skills. This degree will give these employees academic recognition for their efforts. It will provide greater definition to the career path for HVACR technicians. 4. This new academic path will help both the UA and employers recruit and retain the best employees in the field.	
Program Outcomes/Assessment State the knowledge to be gained, skills to be learned, and attitudes to be developed by students in the program. Include assessment methods that will be used to determine the effectiveness of the program.	Outcomes	Assessment method
	Identify building automation components and energy savings opportunities	Tracking results of Green Energy Awareness certification test
	Identify and recommend new sustainable green energy alternatives and quantify savings	Tracking results of Green Energy Awareness certification test

Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to **sjohn@wccnet.edu** for posting on the website.

Curriculum

List the courses in the program as they should appear in the catalog. List minimum credits required. Include any notes that should appear below the course list.

General Education Requirements			**(19 Credits)**
ENG100		Intro to Technical and Workplace Writing	4
UAT 210	*	Public Speaking	1.5
UAT 213	*	Planning and Presenting Lessons	1.5
APP 113	**	Math for Pipe Trades	3
SCI 102	**	Applied Science	3
Soc. Sci.		Elective(s)	3
Arts/Hum.		Elective(s)	3

*Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs. **The math and science courses are included in the specialization.

Major/Area Requirements		**(16 Credits)**
UAE 210	Advanced Electronics & Direct Digital Control Systems	3
UAE 220	Environmental Technology in HVACR	3
MTH 169	Intermediate Algebra	4
BMG ~~105~~ 205	Effective Customer Relations	3
Elective	College Level Elective	3

Program Concentrations:
Complete an apprenticeship program concentration in HVAC. Upon completion of this, students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the apprentice program concentration requirement.

	HVAC Specialty (HVTC)		**(26 Credits)**
	UAE 140	Introduction to HVACR Service	3
	UAE 142	Soldering and Brazing	3
	UAE 144	Refrigeration	2
	UAE 146	Air Conditioning	2
	UAE 148	Electrical Controls	2
	UAE 150	DC Electronics	2
	UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
	UAE 154	Advanced Air Conditioning and Refrigeration	3
	UAE 156	Air and Water Balancing and Motor Alignment	3
	UAE 158	Advanced HVACR Practices	3
	PROGRAM TOTAL		61 60 **Credits**

Budget

Specify program costs in the following areas, per academic year:
Note: * indicates amounts to be paid by the United Association

	START-UP COSTS	ONGOING COSTS
Faculty	$ 15,000.*	$ 0.
Training/Travel	2500.*	0.
Materials/Resources	0.	0.
Facilities/Equipment	0.	0.
Other	0.	0.
TOTALS:	$ 17500.*	$ 0.

Program Description for Catalog and Web site

The Sustainable Technologies in HVACR program is designed for journeyman level HVACR technicians who are ready to complete their associate's degree. This program covers advanced electrical and Direct Digital Controls and covers current and emerging green technologies. The program also focuses on the customer experience, including managing customer relationships and written communications. This program prepares students to take the Green Energy Awareness certification test sponsored by the Green Mechanical Council.

Program Information

Accreditation/Licensure – NA

Advisors – Mike Griffith/Rod Jara

Advisory Committee – Steve Allen, Rod Jara, Les Pullins, Mike Griffith

Admission requirements – None

Articulation agreements – None

Continuing eligibility requirements – Maintain a C average in the program.

Assessment plan:
Goal: The program will prepare students to pass the Green Awareness Certification Test Sponsored by the Green Mechanical Council.

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
Identify building automation components and energy savings opportunities	Green Awareness certification test sponsored by the Green Mechanical Council	Starting after the summer 2010 semester; every third year following	All sections of UAE 220	All
Identify and recommend new sustainable green energy alternatives and quantify savings	Green Awareness certification test sponsored by the Green Mechanical Council	Starting after the summer 2010 semester; every third year following	All sections of UAE 220	All

Scoring and analysis plan:

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally developed rubric, external evaluation, other). Attach the rubric.

   The Green Mechanical Council, a third party testing group, scores the Green Awareness certification test.

2. Indicate the standard of success to be used for this assessment.

   75% of the students will score 80% or higher on the test.

3. Indicate who will score and analyze the data.

   An advisory committee consisting of the UA Program Administrator, the Dean of Distance Learning, the Great Lakes Center Director, and representatives of the UA HVACR Department will review the test results.

4. Explain how and when the assessment results will be used for program improvement.

   Results of Advisory Committee Reviews will be shared with UAE faculty. Areas of weakness will be identified and proposed changes will be presented to the Advisory Committee and implemented as approved.

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/Area Director	Rod Jara		1/5/09
Dean/ Administrator	Jim Egan/Dan Welch	D. Welch	1-5-09
Vice President for Instruction ☐ Approved for Development ☒ Final Approval	Roger M Palay	Roger M. Palay	3/11/09
President	Larry Whitworth	Larry Whitworth	4/28/09
Board Approval			04/28/09

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Program Information Report

School of Apprenticeship Studies

Find a trade-related associate's degree program that builds on your unique set of skills while giving you the knowledge and skills needed to move into organizational leadership.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate and General Education requirements.

United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada

These programs are restricted to members of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada.

Sustainable Technologies in HVACR (APSTH)

Associate in Applied Science Degree

Program Effective Term: Fall 2009

The Sustainable Technologies in HVACR program is designed for journeyman level HVACR technicians who are ready to complete their associate's degree. This program covers advanced electrical and Direct Digital Controls and covers current and emerging green technologies. The program also focuses on the customer experience, including managing customer relationships and written communications. This program prepares students to take the Green Energy Awareness certification test sponsored by the Green Mechanical Council.

Continuing Eligibility Requirements:
Students must maintain a mininum grade of "C."

General Education Requirements		(19 credits)
ENG 100	Introduction to Technical and Workplace Writing	4
UAT 210	Public Speaking*	1.5
UAT 213	Planning and Presenting Lessons*	1.5
APP 113	Math for Pipe Trades**	3
SCI 102	Applied Science**	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

**Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs.*
***The math and science courses are included in the specialization.*

Major/Area Requirements		(16 credits)
BMG 205	Creating the Customer Experience	3
MTH 169	Intermediate Algebra	4
UAE 210	Advanced Electronics and DDC Systems	3
UAE 220	Environmental Technology in HVACR	3
Elective	College-Level Elective	3

Minimum Concentration Credits Required for the Program: **26**
Complete an apprenticeship program concentration in HVAC. Upon completion of this, students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the apprentice program concentration requirement.

Sustainable Technologies in HVACR Concentrations

HVAC Specialty (HVTC)		(26 credits)
UAE 140	Introduction to HVACR Service	3

Program Information Report

UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3
Minimum Credits Required for the Program:		**61**

Notes:

Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.