STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
HVAC106 – Forced Air Systems Lab

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Canino School of Engineering Technology

Department: Mechanical & Energy Systems

Semester/Year: Spring 2024

A. **TITLE**: Forced Air Systems Lab

B. **COURSE NUMBER:** HVAC106

C. **CREDIT HOURS: (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)**

 # Credit Hours: 2
 # Lecture Hours: 2 **per week**
 # Lab Hours: per week
Other: per week

Course Length: 15 **Weeks**

D. **WRITING INTENSIVE COURSE**: Yes ☐ No ☒

E. **GER CATEGORY: None:** ☒ **Yes:** GER

***If course satisfies more than one*:** GER

F. **SEMESTER(S) OFFERED: Fall** ☐ **Spring** ☒ **Fall & Spring** ☐

G. **COURSE DESCRIPTION:**

This course covers the procedures and materials required to install residential and light commercial forced air heating equipment. Furnace installation, ductwork sizing, and duct fabrication are applied. Material takeoffs are performed utilizing building plans, and from field measurements. Thermostats and control equipment are also covered.

H. **PRE-REQUISITES: None** ☒ **Yes** ☐ **If yes, list below:**

CO-REQUISITES: None ☐ **Yes** ☒ **If yes, list below:**

I. STUDENT LEARNING OUTCOMES: (*see key below*)

By the end of this course, the student will be able to:

Course Student Learning Outcome [SLO]	***Program Student Learning Outcome [PSLO]***	***GER*** *[If Applicable]*		
1. Explain components and functions in commercial and residential HVAC applications, relating them to building plans.	PSLO 2		3-Found Skills ISLO ISLO	IM Subsets Subsets Subsets
2. Perform the proper procedures used in installing components, field piping, and field wiring.	PSLO 2		3-Found Skills ISLO ISLO	IM Subsets Subsets Subsets
3. Demonstrate procedures for starting up newly installed HVAC equipment	PSLO 5		5- Industry, Professional, Discipline Specific Knowledge and Skills ISLO ISLO	Subsets Subsets Subsets Subsets
4. Demonstrate the evaluation of operating HVAC equipment	PSLO 2		1-Communication ISLO ISLO	W Subsets Subsets Subsets
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KEY	Institutional Student Learning Outcomes [ISLO 1 – 5]
ISLO #	ISLO & Subsets
1	**Communication Skills** Oral [O], Written [W]
2	**Critical Thinking** *Critical Analysis [CA] , Inquiry & Analysis [IA] , Problem Solving [PS]*
3	**Foundational Skills** *Information Management [IM], Quantitative Lit,/Reasoning [QTR]*
4	**Social Responsibility** *Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]*
5	**Industry, Professional, Discipline Specific Knowledge and Skills**

*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes ☒ No ☐

If YES, select one or more of the following categories:

☒ Classroom/Lab
☐ Internship
☐ Clinical Placement
☐ Practicum
☐ Service Learning
☐ Community Service
☐ Civic
☐ Creative Works/Senior
☐ Research
☐ Entrepreneurship
☐ Engagement
☐ Project
☐
☐

(program, class, project)

K. **TEXTS:**

L. **REFERENCES:**

M. **EQUIPMENT: None ☒ Needed:**

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

Exams, Quizzes, Homework

P. **DETAILED COURSE OUTLINE:**

Q. **LABORATORY OUTLINE: None ☐ Yes ☒**

1. Determine in the field: furnace sequence of operations, fuel use, electrical power, and controls
2. Apply sensible and latent heat equations for air
3. Identify blower types
4. Measure airflow
7. Duct fabrication, installation, insulation, and support

8. Balancing forced air systems
8. Evaluating forced air system performance