



Course Syllabus
SEMESTER
School of Science, Technology, Engineering, and Mathematics

<i>Course Name</i>	Gas Heating Principles
<i>Course & Section Number</i>	SKT 165-XXX
<i>Meeting Day(s) & Time(s)</i>	
<i>Credits</i>	2
<i>Contact Hours</i>	Lecture: 1 hours, Lab: 3 hours
<i>Instructor's Name</i>	
<i>Office Hours & Location</i>	
<i>Phone</i>	
<i>OCC Email *</i>	

* Please use only Owens's email for course communications.

Disclaimer

This syllabus is a guide to what will be covered in this course and when. The instructor reserves the right to amend this syllabus as deemed necessary and will communicate such amendment to the students in the course. Please note that while unlikely, there is a possibility courses might need to change the delivery method due to external issues like public health concerns, weather issues, etc. If this happens, the college will communicate any changes via email and/or other communication methods.

Catalog Description

Covers principles such as natural and liquefied petroleum (LP) gas combustion, burners, orifices, manifolds, heat exchanges, valves, limits, cut outs, thermocouples, dampers, ignition, thermostats, furnaces, boilers and hydronic systems.

Prerequisites

SKT 170 or SKT 171

Course Materials

Fundamentals of HVACR

By Stanfield, Carter

Edition: 4

ISBN-13: 9780136840787

Publisher(s): Pearson Rental Program

*If a **print book, e-book, or access code** is required for class, you can access the Owens Community College e-Campus Bookstore by accessing the course link called “Find Books” on the course schedule for each course section. See the example picture below.*

Course		Course Title				Credit Hrs.	Course Fees	Seats	
Academic Period		Academic Period Dates		Class Type	Course Links				
Days	Times		Room Dates	Instructor	Meeting Type	Building/Room	Location		
SKT131-002		Electrical Prints				3	\$0	20	16
2025 Fall Semester		2025-08-25 - 2025-12-11		Face-to-Face	[Course Info] [Find Books]				
T	8:00 AM - 10:40 AM		2025-08-25 - 2025-12-11	Todd Schick	Lecture	DC 111	Toledo		
Last day to add: Aug 29, 2025 -- Last day to drop: Dec 11, 2025									
Refund deadlines: Aug 29, 2025 (100%) -- Sep 05, 2025 (60%) -- Sep 12, 2025 (50%)									

OER and Owens Community College Library Resources (Open Educational Resources are free online materials for instructor and student use. Some OER material may be available in print in the Owens Community College Library.)

Inclusive Access (I.A.) Materials are included in the cost of the course to save students money through lower negotiated rates with publishers. Courses containing I.A. materials will have it noted on the online class schedule. If your course includes I.A. digital materials, you will receive an email with subject line, “Your inclusive Access Materials,” and it will include any codes or digital links.

- The email will come to your Owens Community College email from the Owens e-Campus Bookstore on the first day of class, if not before. Be sure to check your spam (junk email) if you do not find it in your inbox. If the email is not in your inbox or spam folder, contact your instructor immediately. You may also see a folder at the top of your course labelled “Course Materials by eCampus.” This folder will contain any needed codes or links to needed materials.
- If the I.A. materials also include a printed book or are in print form, the item will be shipped to your address of record automatically based on your enrollment in the course. Please note that some courses do not include printed materials in I.A and those materials would need to be purchased separately using the link on the course schedule. When you access the Find Books link you will see which items in a course are included in I.A.

Technology and Tools (software/hardware requirements)

None

What You Will Learn in the Course

Course Objectives

1. The student will attain a sound basic knowledge of gas combustion
2. Know construction/function of Furnace components/principles

3. Be able to analyze operation of gas controls such as thermostats, fan and limits, ignition systems
4. Know how a furnace is sized for a structure
5. Understand components of a gas furnaces and their operation

Student Learning Outcomes

Upon the successful completion of this course, students will:

Student Learning Outcome	Where Assessed
1. Demonstrate analysis of operation of gas controls such as thermostats, fan and limits, ignition systems	Unit quizzes/exams; gas furnace controls lab/check-off; graded troubleshooting scenarios.
2. Demonstrate how a furnace is sized for a structure	Furnace sizing assignment/worksheet; quiz/exam questions on sizing; installation-related activity.
3. Show knowledge of a gas furnace and its operation	Unit quizzes/exams; combustion/furnace operation lab activities; furnace tear-down worksheet/check-off.
4. Be able to troubleshoot Gas heating components/systems	Troubleshooting labs (gas/electric heat and boilers); preventive maintenance (PM) check-offs; practical troubleshooting assessment and/or final exam items.

Program Outcomes

The following program outcomes are assessed in this course:

Outcome	Where Assessed
Students will be able to use electrical meters, refrigeration equipment, and miscellaneous tools used in the industry.	HVAC lab activities/projects requiring meter use and tool operation; graded lab performance/check-offs; practical troubleshooting tasks using test instruments.

Institutional General Education Competencies

As a student at Owens Community College, you will take general education courses as part of your degree program. Skills and knowledge specific to general education courses will be reinforced in many of your degree program major courses and may be measured in your capstone course(s) and others as identified.

Competency	Where Assessed
Act with professional responsibility	Lab safety/professionalism rubric (PPE, procedures, tool care); safe meter use and proper work practices during labs; attendance/preparedness for lab.

Technology, Lab, and File Requirements:

You must bring your own safety glasses, closed toed non-skid shoes and clothing without loose.

Academic Support

Disability Services

If you have a disability or acquire one, you may be entitled to receive reasonable accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to register for accommodations, please contact the Disability Resource Center at 567-661-7007, email disability@owens.edu, visit <https://www.owens.edu/disability/>, or stop by College Hall 116.

Tutoring Services

Owens Community College offers academic tutoring and assistance in a variety of subjects including: accounting, computing, economics, mathematics, science, and writing. For more information go to: <https://www.owens.edu/successcenters/>

Counseling Services

Owens Community College provides assistance to students experiencing personal, educational, interpersonal/relationship, family, social, or psychological difficulties. If you feel you may benefit from this service, please contact them at counselingservices@owens.edu. More information is at <https://www.owens.edu/counseling/>

Campus and Community Connections

The Center for Campus and Community Connections (College Hall 151) is a walk-in office created to provide retention support through resource stability initiatives and community connections. Go here for more information: <https://www.owens.edu/connection/> or contact connections@owens.edu

Owens Library

The Owens Library offers two locations (Toledo and Findlay) as well as online resources. For more information visit <https://www.owens.edu/library/>.

General Information

Student Code of Conduct

All students are expected to follow Owens Community College's Student Code of Conduct, which includes academic honesty, encompassing plagiarism. See the Board Policy for more information. If you are unfamiliar with the Student Code of Conduct and Board Policy on academic honesty and plagiarism, they can be found at:

Student Code of Conduct: www.owens.edu/conduct/

Board Policy: www.owens.edu/media/trustees/board_policies/11-2-33.pdf

Anti-Discrimination and Harassment & Title IX/Sexual Misconduct

All students, faculty, and staff are expected to follow Owens Community College's Anti-Discrimination and Harassment Policy and the College's Title IX/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

If you are unfamiliar with the Anti-Discrimination and Harassment Policy, it can be found at:

[https://www.owens.edu/media/trustees/board_policies/11-4-17.pdf](http://www.owens.edu/media/trustees/board_policies/11-4-17.pdf)

If you are unfamiliar with the Title IX/Sexual Misconduct Procedures and Guidelines, it can be found at: <https://www.owens.edu/trustees/wp-content/uploads/sites/45/2020/08/11-4-17-Title-IX-Sexual-Misconduct-Procedures-and-Guidelines.pdf>

Religious Accommodations

A student seeking an accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a written email notice with the specific dates for an absence, and must do so not later than fourteen (14) days after the first day of instruction. Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy*. The request for an alternative accommodation will be kept confidential. Students with questions about a religious accommodation under Ohio's Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu. The policy may be found on the Owens website: [3358:11-2-63](#) - Accommodation for a Student Absence for the Observance of Religious Beliefs and Practices Policy.

Document Collection

Throughout the semester, your instructors may ask for a variety of assignments including tests and/or quizzes for student learning of institutional general education competencies or program assessment. Please save all your class materials until the end of the semester.

Classroom Admittance

OCC classes shall only be attended by the officially registered OCC students or prospective students, instructor of record, guest lecturer, or substitute. Visitors are not permitted to be in the classroom and should not be invited to attend or participate in the class. See Family Educational Rights and Privacy Act (FERPA) regulations for more information: <https://studentprivacy.ed.gov/ferpa>

Use of AI Tools: This course requires you to complete various assignments that assess your understanding and application of the course content. You are expected to do your own work and cite any sources you use properly. You are not allowed to use any artificial intelligence (AI) tools, such as chatbots, text generators, paraphraser, summarizers, or solvers, to complete any part of your assignments. Any attempt to use these tools will be considered academic misconduct and will be dealt with according to the Owens Community College academic integrity policy. Students are expected to complete all work independently and without the assistance of AI-generated content. If you have any questions about what constitutes acceptable use of AI tools, please consult with the instructor **before** submitting your work.

Student Responsibilities & Instructor Expectations

Late Work (work turned in after assigned due date)

1. Blackboard Exams must be taken during the posted time frame. In class exams must be taken during class. Extenuating circumstances, such as school approved absences will be offered make-up exams. (Bereavement, Hospitalization, etc.)

2. Online tests/quizzes/homework will have due-date limits set. You must complete the online work within the specified time frame. After the time limit (due-date) is reached, the form will stop accepting responses.
3. Hardcopy work (paperwork assignments) -- 5% of grade will be deducted for each calendar day late.
4. Work turned in after 7 calendar days will be evaluated by instructor, but the student will receive no more than 50% for their grade on the assignment. After 10 calendar days the student will receive a zero.

Specific Course Rules

Safety is our number one concern in both the lab setting and classroom. Any student that is found to cause a hazardous situation either to themselves or others will be removed from the lab/classroom. All students in the classroom/lab should be able to feel safe and receive a positive learning environment.

Cell phones and devices: Over the past few years cell phones have become a major issue in the classroom and lab. The phones and other devices become a major distraction to the learning environment if not used correctly. Students will have projects to be working on when bookwork is done; there is limited need for them to have their phones or electronics out in class.

“Personal digital devices equipped with picture taking or video capabilities, text messaging, and Internet access can add value to the learning process when used appropriately.” Student personal digital devices that are brought to college or enroute to or from college or any college sponsored activity;

- Remain the sole responsibility of the owner. The college is not liable for damage, loss, or theft.
- At the college level may be used responsibly during non-instructional time and/or during instructional time for educational purposes when requested and supervised by a staff member.
- With video or picture taking ability may not be used at any time or place where individuals have an expectation of privacy such as restrooms or locker rooms.
- Photographs or images of individuals may not be taken or recorded without the person’s knowledge and permission.
- May not be used to harass, intimidate, or bully anyone, at any time.
- May not be used in any way that detracts from the “learning environment of the college.”

Bullying is a serious topic in any setting. Bullying will not be tolerated and if a student is found to be unable to conduct themselves properly they will be reported to the office and college policies will be followed. This may include the student being removed from the Program. All students deserve a positive learning environment. Please contact me if there is ever an issue. I cannot help if I don’t know there’s an issue!

No Foul Language

How Grades and Determined and Major Assignments

Evaluation Measure The grade points for the areas of work are as follows.	Student Learning Outcomes Assessed	Value
Quizzes (5 @ 10 pts each)	1-3	50 points
Practical Exam	1-3	50 points
Final Exam	1-4	50 points
TOTAL FOR SEMESTER		150 points

Grading Procedure:

Grades will be calculated on the following scale.

90% and Above	A
80% to Less than 90%	B
70% to Less than 80%	C
60% to Less than 70%	D
Less Than 60%	F

Assignment Calendar

Week	SLO	Topic	Activity
1	3	Introduction and Review	
2	3	Units 7-10	
3	1,4	Electrical 30-33	
4	1,4	Electrical 34-37	
5	1,4	Electrical 42-44	
6	3	Principles of combustion - Gas furnaces	
7	1,3,4	Gas furnace controls	
8	2,3	Gas furnace installation – Oil Heating	
9	4	Group one PM	
10	4	Group two PM	
11	1,4	Space heaters, Humidifiers, Electric heat, Troubleshooting Electric heat	
12	3,4	Boilers	
13	3,4	Boilers	
14	3,4	Furnace Tare Down	
15	1-4	Review	
16	1-4	Final Exam	