

MASTER SYLLABUS

Course Discipline Code & No: UAF126 Title: Hydronic Heating and Steam Systems Effective Term SS 2009  
 Division Code: VCT Department Code: UA Org #: 28310  
 Don't publish:  College Catalog  Time Schedule  Web Page

Reason for Submission. Check all that apply.  
 New course approval  Reactivation of inactive course  
 Three-year syllabus review/Assessment report  Inactivation (Submit this page only.)  
 Course change

Change information: Note all changes that are being made. Form applies only to changes noted.

Consultation with all departments affected by this course is required.  Total Contact Hours (total contact hours were: \_\_\_\_\_)  
 Course discipline code & number (was \_\_\_\_\_)\*  Distribution of contact hours (contact hours were:  
 \*Must submit inactivation form for previous course. lecture: \_\_\_\_\_ lab \_\_\_\_\_ clinical \_\_\_\_\_ other \_\_\_\_\_)  
 Course title (was \_\_\_\_\_)  Pre-requisite, co-requisite, or enrollment restrictions  
 Course description  Change in Grading Method  
 Course objectives (minor changes)  Outcomes/Assessment  
 Credit hours (credits were: \_\_\_\_\_)  Objectives/Evaluation  
 Other \_\_\_\_\_

Rationale for course or course change. Attach course assessment report for existing courses that are being changed.

Approvals Department and divisional signatures indicate that all departments affected by the course have been consulted.

Department Review by Chairperson  New resources needed  All relevant departments consulted  
 Print: Dan Welch Signature D. Welch Date: 2/2/09  
 Faculty/Preparer  
 Print: \_\_\_\_\_ Signature \_\_\_\_\_ Date: \_\_\_\_\_  
 Department Chair

Division Review by Dean  
 Request for conditional approval  
 Recommendation  Yes  No D. Welch 2/2/09  
 Dean's/Administrator's Signature Date

Curriculum Committee Review  
 Recommendation  Tabled  Yes  No Ken Veasy 3/18/09  
 Curriculum Committee Chair's Signature Date

Vice President for Instruction Approval  
Roger M. Palsky 3/19/09  
 Vice President's Signature Date  
 Approval  Yes  No  Conditional

Do not write in shaded area.  
 Log File 2/19/09 Ecopy  Banner 3/19 C&A Database 3/19 C&A Log File 3/19 Basic skills  Contact fee

Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to [sjohn@wccnet.edu](mailto:sjohn@wccnet.edu) for posting on the website.

**\*Complete ALL sections which apply to the course, even if changes are not being made.**

Course: UAF126	Course title: Hydronic Heating and Steam Systems
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<b>Credit hours:</b> <u>2</u> If variable credit, give range: _____ to _____ credits	<b>Contact hours per semester:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center; border-bottom: 1px solid black;">Student</td> <td style="text-align: center; border-bottom: 1px solid black;">Instructor</td> </tr> <tr> <td>Lecture:</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Lab:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>Clinical:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>Practicum:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>Other:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td><b>Totals:</b></td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> </tr> </table>		Student	Instructor	Lecture:	30	30	Lab:	—	—	Clinical:	—	—	Practicum:	—	—	Other:	—	—	<b>Totals:</b>	30	30	<b>Are lectures, labs, or clinicals offered as separate sections?</b> <input type="checkbox"/> Yes - lectures, labs, or clinicals are offered in separate sections <input type="checkbox"/> No - lectures, labs, or clinicals are offered in the same section	<b>Grading options:</b> <input type="checkbox"/> P/NP (limited to clinical & practica) <input type="checkbox"/> S/U (for courses numbered below 100) <input checked="" type="checkbox"/> Letter grades
	Student	Instructor																						
Lecture:	30	30																						
Lab:	—	—																						
Clinical:	—	—																						
Practicum:	—	—																						
Other:	—	—																						
<b>Totals:</b>	30	30																						

**Prerequisites.** Select one:

College-level Reading & Writing     
  Reduced Reading/Writing Scores  
(Add information at Level I prerequisite)

No Basic Skills Prerequisite  
(College-level Reading and Writing is not required.)

**In addition to Basic Skills in Reading/Writing:**

Level I (enforced in Banner)

	Course	Grade	Test	Min. Score	Concurrent Enrollment <small>Can be taken together)</small>	Corequisites <small>Must be enrolled in this class also during the same semester)</small>
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____	<input type="checkbox"/>	_____
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____	<input type="checkbox"/>	_____
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____	<input type="checkbox"/>	_____

Level II (enforced by instructor on first day of class)

	Course	Grade	Test	Min. Score
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____

**Enrollment restrictions** (In addition to prerequisites, if applicable.)

and  or Consent required     
  and  or Admission to program required     
  and  or Other (please specify): \_\_\_\_\_  
 Program: UA apprenticeship

**Please send syllabus for transfer evaluation to:**  
 Conditionally approved courses are not sent for evaluation.  
 Insert course number and title you wish the course to transfer as.

<input type="checkbox"/> E.M.U. as _____	<input type="checkbox"/> _____ as _____
<input type="checkbox"/> U of M as _____	<input type="checkbox"/> _____ as _____
<input type="checkbox"/> _____ as _____	<input type="checkbox"/> _____ as _____

<b>Course</b> UAF126	<b>Course title:</b> Hydronic Heating and Steam Systems
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<b>Course description</b> State the purpose and content of the course. Please limit to <u>500</u> characters.	<p>This course is concerned primarily with the technical aspects of design and installation of several types of hydronic systems found in the pipe trades. Topics also include information concerning the installation of high-efficiency heating and cooling systems, low and high temperature, radiant heat and solar hot water heating systems. The steam system portion of the course includes: generating steam, installing steam piping and accessories and troubleshooting all types of steam systems.</p> <p>This course is taught at United Association (UA) Training Centers throughout the United States and Canada. Enrollment is limited to apprentices accepted in to a UA training program.</p>
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<b>Course outcomes</b> List skills and knowledge students will have after taking the course.	<b>Outcomes</b> (applicable in all sections)	<b>Assessment</b> Methods for determining course effectiveness
	<p>Upon successful completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Explain how water can be used to heat and/or cool spaces with various equipment and piping arrangements</li> <li>• Lay out a hot water heating and/or cooling system with all controls and components</li> <li>• Describe the difference between conduction, radiation and convection when used in a hydronic system</li> <li>• Demonstrate how solar energy can be used in space heating applications for efficiency</li> </ul>	<p>This course is assessed externally by the local's Joint Apprenticeship Training Committee (JATC), consisting of industry representatives and UA members. The local receives feedback on needed technical updates and apprentice skill performance.</p>

<b>Course Objectives</b> Indicate the objectives that support the course outcomes given above.	<b>Objectives</b> (applicable in all sections)	<b>Evaluation</b> Methods for determining level of student performance of objectives
	<p>Objectives and evaluation methods follow the International Pipe Trades Curriculum Outline issued by the UA Training Department.</p>	

**List all new resources needed for course, including library materials.**  
No new resources, courses are taught at existing UA local training schools.

**Student Materials:**

<b>List examples of types</b> Texts Supplemental reading Supplies Uniforms Equipment Tools Software	UA local training schools provide all the necessary books and materials for the students.	<b>Estimated costs</b> \$ 0
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**Equipment/Facilities:** Check all that apply. (All classrooms have overhead projectors and permanent screens.)

Check level <u>only</u> if the specified equipment is needed for <u>all</u> sections of a course. <input type="checkbox"/> Level I classroom Permanent screen & overhead projector  <input type="checkbox"/> Level II classroom Level I equipment plus TV/VCR  <input type="checkbox"/> Level III classroom Level II equipment plus data projector, computer, faculty workstation	<input type="checkbox"/> Off-Campus Sites <input type="checkbox"/> Testing Center <input type="checkbox"/> Computer workstations/lab <input type="checkbox"/> ITV <input type="checkbox"/> TV/VCR <input type="checkbox"/> Data projector/computer <input checked="" type="checkbox"/> Other <u>Taught at UA Local schools</u>
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**Assessment plan:**

Learning outcomes to be assessed (list from Page 3)	Assessment tool	When assessment will take place (semester & year)	Course section(s)/other population	Number students to be assessed
<ul style="list-style-type: none"> <li>Explain how water can be used to heat and/or cool spaces with various equipment and piping arrangements</li> <li>Lay out a hot water heating and/or cooling system with all controls and components</li> <li>Describe the difference between conduction, radiation and convection when used in a hydronic system</li> <li>Demonstrate how solar energy can be used in space heating applications for efficiency</li> </ul>	Contractors (employer) provide paper feedback forms for apprentice skill performance reviews.  JATC contractor members provide specifications detailing technical updates.	WCC will prepare a summary report on assessment activities in Winter 2011 and every three years thereafter.	All	All

**Scoring and analysis of assessment:**

- Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally developed rubric, external evaluation, other). Attach the rubric/scoring guide.  
**Individual locals use apprentice feedback forms filled out by the employing contractor.**
- Indicate the standard of success to be used for this assessment.  
**The standard of success is set by the local JATC.**
- Indicate who will score and analyze the data (data must be blind-scored).  
**The data is analyzed by the JATC as a committee.**
- Explain the process for using assessment data to improve the course.  
**Results are initially shared with the training coordinator for the local. The training coordinator then works with appropriate instructor staff to make needed changes.**