

UMBC UGC Change in Existing Course: ENME 423 - Heating, Ventilation and Air Conditioning Design

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Proposed Effective Date: **Spring 2020**

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**COURSE INFORMATION:** (please provide all information in the "current" column, and only the information changing in the "proposed" column)

change		current	proposed
<input type="checkbox"/>	Course Number(s)	ENME423	
<input type="checkbox"/>	Formal Title	Heating, Ventilation and Air Conditioning Design	
<input type="checkbox"/>	Transcript Title (≤30c)	Heat, Vent, AC Design	
<input type="checkbox"/>	Recommended Course Preparation		
<input checked="" type="checkbox"/>	Prerequisite <small>Unless otherwise indicated, a prerequisite is assumed to be passed with a "D" or better.</small>	You must have completed <a href="#">ENME 304</a> and <a href="#">ENME 321</a> and <a href="#">ENME 332L</a> and <a href="#">ENME 360</a> , with a grade of 'C' or better.	You must have completed ENME321, ENME304 , ENME 360, and ENME 332L with a grade of 'C' or better, <b>or</b> have completed ENME321 and 304 with a grade of 'C' or better, and be concurrently enrolled in ENME 332L and 360.
<input type="checkbox"/>	# of Credits	3	
<input type="checkbox"/>	Repeatable?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/>	Max. Total Credits	3	<b>Max. Total Credits:</b>
<input type="checkbox"/>	Grading Method(s)	<input checked="" type="checkbox"/> Reg (A-F) <input type="checkbox"/> Audit <input type="checkbox"/> Pass-Fail	<input type="checkbox"/> Reg (A-F) <input type="checkbox"/> Audit <input type="checkbox"/> Pass-Fail

**CURRENT CATALOG DESCRIPTION:**

Topics will include heating and cooling load calculations; psychrometrics applied to HVAC design, thermodynamics of refrigeration, space air diffusion, piping and duct flow analysis, introduction to solar energy and indoor air quality.

**PROPOSED CATALOG DESCRIPTION** (Approximately 75 words in length. Please use full sentences):

The topics to be covered will include heating and cooling load calculations; psychrometrics applied to HVAC design, thermodynamics of refrigeration, space air diffusion, piping and duct flow analysis, introduction to solar energy and indoor air quality.

**RATIONALE FOR CHANGE:**

The Undergraduate Committee of Mechanical Engineering Department has reviewed the course syllabus and discussed with the course instructor about the preliminary requirement for this course. Based on the course topics and its emphasis on design, only ENME 321 (Transfer Processes) and ENME 304 (Machine Design) are required for students to be successful in ENME 423. Knowledge in ENME 332L (Solid Materials Lab) and 360 (Vibration), also listed in current prerequisites, are unnecessary. However, as ENME 423 presents students with real world applications with competing constraints, engineering knowledge in 332L and 360 will help students to develop rules-based decision making and judgment in design process. These two course should be taken concurrently with ENME 423. The change aims to place a more course-specific requirement and allow students to take electives when they are qualified for.

Current preliminary requirement of four courses for ENME 423 is synonymous to completion of all 300 level courses and ENME 423 is restricted to seniors. This requirement is excessively rigid and creates unnecessary barriers for students in their academic planning.