



Bachelor of Science Degree
**HVACR Engineering Technology and
 Energy Management**
 Course Sequence Guide

Student:			
Email:		ID:	
Advisor:		Ph:	

YEAR 3 - FALL SEMESTER				Crs	Gr
HVAC	321	HVAC Air Side System Select-Design (Admission to BS in HVACR Engineering Tech & Energy Mgt)		4	
HVAC	342	Load Analysis & Energy Modeling (Admission to BS in HVACR Engineering Tech & Energy Mgt)		4	
ARCH	110	Intro to Computer Graphics in ARCH for HVACR Students		2	
MATH	126	Algebra & Analytical Trig. (MATH 116)(Students who took MATH 115 shall take MATH 120)		4	
ENGL	311	Advanced Technical Writing		3	
Total				17	
YEAR 3 - SPRING SEMESTER				Crs	Gr
HVAC	312	Control Theory & Application (C- or better in HVAC 321, HVAC 342 & MATH 126)		4	
HVAC	325	HVAC Hydronic System Select-Design (C- or better in HVAC 321, HVAC 342 & MATH 126)		4	
HVAC	350	Contracting Issues in HVACR (C- or better in HVAC 321, HVAC 342 & MATH 126)		4	
		Scientific Understanding Elective		4	
MATH		Students who took MATH 115 & 120 in Fall shall take MATH 130			
Total				16	
YEAR 3 - SUMMER SEMESTER				Crs	Gr
HVAC	393	Summer Internship (C- or better in HVAC 312, HVAC 325 & HVAC 350)		4	
Total				4	
Submit Application for Graduation.					
YEAR 4 - FALL SEMESTER				Crs	Gr
HVAC	415	Direct Digital Control (C- or better in HVAC 393 & MATH 126)		4	
HVAC	451	Energy Audit and Analysis [WIC] (C- or better in HVAC 393 & MATH 126)		4	
HVAC	462	HVAC Primary HVAC Equipment Selection (C- or better in HVAC 393 & MATH 126)		4	
		Cultural Enrichment Elective		3	
Total				15	
YEAR 4 - SPRING SEMESTER				Crs	Gr
HVAC	499	Commercial HVAC System Design [WIC] (C- or better in HVAC 415, HVAC 451 & HVAC 462)		4	
ECON	221	Principles of Economics 1		3	
		Cultural Enrichment Elective		3	
		Social Awareness Elective		3	
Total				13	

Learning Outcomes Include:

- 1) analyze & select commercial/industrial HVAC systems for specific applications,
- 2) design commercial/industrial HVAC systems, given design parameters, building type, & geographic location,
- 3) select secondary equipment for specific commercial/industrial ducting & piping systems,
- 4) select primary equipment for specific commercial/industrial ducting & piping systems,
- 5) commission a commercial or industrial HVAC system,
- 6) perform an energy audit of an actual facility & analyze utilities for proper applications; Operation & Maintenance & Energy Conservation Measures for potential energy savings; & implementation feasibility using payback calculations,
- 7) understand, utilize & develop estimates, specs, economic costs, & analysis codes & standards,
- 8) program control sequences for specific commercial & industrial HVAC systems & equipment



Bachelor of Science Degree

HVACR Engineering Technology and Energy Management

Program Academic Requirements

Student:					
email:				ID:	
Advisor:				Ph:	
		MAJOR	Cr	Gr	
HVAC	312	Control Theory & Application (C- or better in HVAC 321, HVAC 342 & MATH 126)	4		
HVAC	321	HVAC Air Side System Select-Design (Admission to BS in HVACR Engineering Tech & Energy Mgt)	4		
HVAC	325	HVAC Hydronic System Select-Design (C- or better in HVAC 321, HVAC 342, & MATH 126)	4		
HVAC	342	Load Calculation & Energy Code (Admission to BS in HVACR Engineering Tech & Energy Mgt)	4		
HVAC	350	Contracting Issues in HVACR (C- or better in HVAC 321, HVAC 342 & MATH 126)	4		
HVAC	393	Summer Internship (C- or better in HVAC 312, HVAC 325 & HVAC 350)	4		
HVAC	415	Direct Digital Control (C- or better in HVAC 393 & MATH 126)	4		
HVAC	451	Energy Audit and Analysis [WIC] (C- or better in HVAC 393 & MATH 126)	4		
HVAC	462	HVAC Primary HVAC Equipment Selection (C- or better in HVAC 393 & MATH 126)	4		
HVAC	499	Commercial HVAC System Design [WIC] (C- or better in HVAC 415, HVAC 451 & HVAC 462)	4		
		TECHNICAL RELATED			
ARCH	110	Intro to Cmptr Graphics in ARCH for HVACR Students	2		
		COMMUNICATIONS COMPETENCE			
ENGL	311	Advanced Technical Writing	3		
		QUANTITATIVE SKILLS			
MATH	126	Algebra & Analytical Trig. (C- or better in MATH 116)	4		
		SCIENTIFIC UNDERSTANDING			
		Scientific Understanding Elective	4		
		CULTURAL ENRICHMENT			
		Cultural Enrichment Elective	3		
		Cultural Enrichment Elective	3		
		SOCIAL AWARENESS			
		Social Awareness Elective	3		
ECON	221	Principles of Economics 1	3		
		Unofficial Statistics			
				Major: Total Crs / Earned Crs / Honor Points	40
				Degree: Total Crs / Earned Crs / Honor Points	65
				GPA Major:	-
				GPA Degree:	-

Bachelor of Science General Education Requirements:

One Global Consciousness Course (3cr), One Race - Ethnicity - Gender (REG) Course (3cr), and One Foundation Course (3cr)

Multiple requirements may be satisfied by a single course.

Cultural Enrichment – 9 credits (3 credits in course > 200 level), Social Awareness - 9credits (3 credits in course > 200 level)

Students must complete 40 credits at or above the 300 level.

[Reference: http://www.ferris.edu/htmls/academics/gened/gen_edspecific.html]

Contact the HVACR Program office
for more information!
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