

COURSE	DESCRIPTION	FALL	SPRING	SUMMER
ENE 5020 - Introduction to Energy Management	Overview of the role of energy and energy management in business. Includes energy statistics, reporting and goal setting, balancing business with sustainability, measurement and verification, fuel switching, financing and performance contracting, energy codes and legislation. 3 credits	X		
ENE 5040 - Introduction to Commercial HVAC Design	Introduction to heating, ventilating and air conditioning systems. Includes comfort, health, HVAC sizing and design for commercial buildings, system categories, types and characteristics, heating, cooling and ventilation calculations, hydronic systems, air systems, distribution, zoning and control, psychrometrics and refrigeration cycle. 4 credits		X	
ENE 5045 - Automatic Controls	Covers automatic control theory and application. Includes capacity regulation, energy management, and optimization, control modes open and closed-loop, process feedback, cascade control, instrumentation, end-device characteristics, and basic energy management strategies. 2 credits; Prer. ENE 5040			X
ENE 5060 - Energy Systems I	Studies commercial building components responsible for energy use. Includes lighting technologies, complex HVAC systems, primary heating & cooling, combustion and thermal efficiency, 2/4-pipe hydronic systems, energy transport burden, district heating and cooling, air and water economizers. 4 credits; Prer. ENE 5045	X		
ENE 5065 - Energy Systems II	Covers advanced systems and controls for commercial building systems. Psychrometric applications, overlapping heating and cooling, waste heat recovery, demand controlled ventilation, daylight harvesting, measure interaction, indoor air quality impacts from energy conservation. Introduction to industrial energy process evaluation. 4 credits; Prer. ENE 5060		X	
ENE 5030 - Introduction to Alternative Energy Systems	Introduces renewable alternatives to conventional fossil fuel energy supply sources. Includes combined heat and power, photovoltaic, wind, solar pool heating, passive solar, cool roof, energy storage, carbon footprint, embedded energy, externalities, government roles and society cost tests. 3 credits			X
ENE 5070 - Quantifying Energy Use I	Introduces basic calculation methods for quantifying energy use and energy savings. Includes load profiles, parasitic and standby losses, compounding efficiencies, integrated design, design energy budgets, transport energy, benchmarks and end use division for rough estimating. 4 credits; Prer. ENE 5065	X		
ENE 5075 - Quantifying Energy Use II	Applied advanced energy accounting methods and energy modeling techniques. Includes incremental and overall energy use approaches, computer simulation, overlaying equipment efficiencies and with load profile data, use of spreadsheet formulae, overlapping and dependent measures, and utility rate structures. 4 credits; Prer. ENE 5070		X	
ENE 5080 - Energy Engineering Capstone Project	Students will apply knowledge gained in the program to a real-world capstone project. Activities will demonstrate marketable skills in energy system knowledge, identifying opportunities, analysis for quantifiable savings, engineering economics, report writing, and presentation. 2 credits; Prer. ENE 5020, ENE 5030, ENE 5075			X