

### Mapping of Required ESE Courses to Applicable ABET Student Outcomes

Energy Systems Engineering (ESE)	Student Outcomes for All ABET-Accredited Engineering Programs (a-k)										
	Ability to apply mathematics, science, and engineering Ability to design and conduct experiments, as well as to analyze and interpret data Ability to design a system, component, or process to meet desired needs Ability to function on multi-disciplinary teams Ability to identify, formulate, and solve engineering problems Understanding of professional and ethical responsibility Ability to communicate effectively Broad education necessary to understand the impact of engineering solutions in a global and societal context Recognition of the need for, and an ability to engage in life-long learning Knowledge of contemporary issues Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
<b>Required ESE Course</b>	<b>"X" = course includes learning outcome(s) that directly support the associated ABET student outcome</b>										
MIME 101 - Introduction to MIME			X		X	X	X	X	X		X
ENGR 112 - Intro to Engr. Computing					X						X
ENGR 212 - Dynamics	X				X						X
IE 212 (ESE CIS 122) - Computational Methods for IE	X		X		X		X		X		
IE 415 - Simulation & Decision Support	X	X	X	X	X		X				X
IE425 - Industrial Systems Optimization	X				X						X
IE/ME 497/98 (ESE 497/98) - MIME Capstone Design			X	X		X	X				
IE 499 - ESE Energy Regulation (IE499 Ereg)	X				X	X				X	X
ME 311 - Intro. Thermal-Fluid Sciences					X						
ME 312 - Thermodynamics			X		X						
ME 331 - Introductory Fluid Mechanics		X			X						
ME 332 - Heat Transfer			X		X						
IE 499 - ESE ESA/Energy System Assessment)					X			X			
IE 499 - ESE ES/Energy Storage)			X		X			X		X	
IE 499 - ESE ED/Energy Distribution)	X							X		X	X
CHE 499 (ESE 450) - Special Topics	X		X		X	X		X	X	X	