Version December 2008

Relationship Between Sweet Briar College Engineering Curriculum and Program and ABET Defined Outcomes

	--Physics/Chem--						----Math/Comp-----						--Fundamentals--						----------Applied----------												--------Humanities--------							
	Prin. Chem	Chemistry lab	Gen. Physics I	Gen. Physics I lab	Gen. Physics II	Gen. Physics II lab	Calculus I	Calculus II	Calculus III	Math Methods	Computational techniques lab	Applied Statistics	Into Engin Design	Fund. Engin Analysis	Materials and manufacturing	Statics/Strength of Materials	Dynamics and Kinematics	Electric Circuits	Engineering Industrial Co-op	Signals and Systems	Thermal and Fluid Systems	Machine Design	Systems Modeling and Controls	Technology and Society	Mechatronics	Project Selection/Management	Capstone Engin. Design	Engineering Elective	Thought & Expression	Foreign Language	U.S./Europe/ Cultural Hist.	Literature	Different values/cultures	Art/music/drama, etc.		
Code X = Exposure, F = Familiarity, D = In depth	CHEM 131	CHEM 141	PHYS 171	PHYS 131	PHYS 172	PHYS 132	MATH 123	MATH 124	MATH 223	PHYS 201	PHYS 201 lab	MATH 205	ENGR 110	ENGR 120	ENGR 215	ENGR 205	ENGR 206	ENGR 221	ENGR 378	ENGR 316	ENGR 307	ENGR 331	ENGR 415	ENGR 230-2	ENGR 424	BUSN 326	ENGR 451	ENGR 4XX	ENGL 104	V3 Foreign Lang.	Gen Educ VI	Gen Educ V2	Gen Ed. V4/5	Gen Ed. V6ab	Phys ed.		
credits	4	1	4	1	4	1	4	4	3	3	1	3	4	3	4	3	3	4	1	3	4	3	4	3	3	3	3	3	3	12	3	3	9	4	2		
PROGRAM OUTCOMES																																					
PROFESSIONAL PRACTICE - outcomes related to Objective 1																																					
1a- Demonstrate knowledge of math, science, and engineering fundamentals	F		F		F		F	D	D	D	D				X	D	D	D	X	D	F	D	D		F												
1b- Apply fundamental skills to technical problems	F		F		F								X	F	X	D	D	F	X	F	D	D	D	F	D		D	F									
1c- Identify and organize engineering problems (design)													X	X		F	F	F	X	X	F	D	F	F	D		D	F									
1d- Select equipment and procedures for engineering experiments		X		X		X									F			F			D		F		D												
1e- Analyze and interpret experimental and statistical information		X		X		X						D	X	X	F			F			F		F		D												
1f- Use modern computational tools/techniques for problem solving/data analysis										F	D			D		X	F			D		F	D		D		F	F									
TECHNICAL LEADERSHIP - outcomes related to Objective 2																																					
2a- Function as a member or leader of a multidisciplinary team				X		X							F			F			X			F		D	F		D										
2b- Effective writing, speaking, and electronic media communication skills													F	F	D				F	X		D				X	D		D			D					
2c- Apply sound business practices and project organization techniques																			F					D		D	F										
2d- Maintain skills and awareness through continuous learning													X		X				X		F						D										
2e- Appreciate the role of professional organizations													X		F						F						X										
GLOBAL PERSPECTIVE - outcomes related to Objective 3																																					
3a- Speak and write a foreign language at an introductory level																								X						D							
3b- Adhere to the code of ethics of engineering													X			X			F			F		D													
3c- Understand the global nature of modern technology														X					X					D			F										
3d- Appreciate the role of history, culture, and humanities in the global society																								D							D	D	D	D			
3e- Incorporate contemporary issues into technical projects/decisions													X						X			X		D	F	D	F										
ABET a-k Outcomes **(#s in parenthesis denote related program defined outcomes)**																																					
a- Apply knowledge of math/science/engineering (1a, 1b)	F		F		F		F	D	D	D	D		X		X	D	D	D	X	D	F	D	D		F												
b- Design and conduct experiments, analyze data (1d, 1e)	F	X		X		X						D	X	X	F			F			D		F		D												
c- Design system, component, or process to meet desired needs with real constraints (1c)													X	X		F	F	F	X	X	F	D	F	F	D		D	F									
d- Function on multidisciplinary teams (2a)				X		X							F			F			X			F		D	F		D										
e- Identify,formulate, and solve engineering problems (1b, 1c)	F		F		F								X	F	X	D	D	F	X	F	D	D	D	F	D		D	F									
f- Professional and ethical responsibility (2e, 3b)													X		F						F						X										
g- Communicate effectively (2b)													F	F	D				F	X		D				X	D		D								
h- Broad education to understand engineering's global, social, economic impact (3c, 3d, 3e)														X					X					D		F	F										
i- Need for life long learning (2d)													X		X				X		F						D										
j- Knowledge of comtemporary issues (3e)													X						X			X		D	F	D	F										
k- Modern techniques, skills, tools for practice (1f)										F	D			D		X	F		X	D		F	D		D		F	F									