BioResource and Agricultural Engineering and Agricultural Systems Management

PROJECTED COURSE OFFERINGS 2017-2018

Course #	Course title	Units	F	W	S	Prerequisites
BRAE 121	Agricultural Mechanics	2	•	•		None
BRAE 128	Careers in BioResource/Ag Engr	2	•			None
BRAE 129	Laboratory Skills and Safety	1	•	•	•	BRAE and ASM majors only
BRAE 133	Engineering Design Graphics	1	•	•		None, BRAE 151 co-requisite
BRAE 141	Agricultural Machinery Safety	3	•		•	None
BRAE 142	Ag Power and Machinery Management	4	•			Math 116 or equivalent
BRAE 151	CAD for Agricultural Engineering	1	•	•		BRAE 133 or equivalent; co-requisite
BRAE 152	3-D Solids Modeling	1	•	•	•	BRAE 133, BRAE 151 or equivalent
BRAE 200	Special Problems for Undergraduates	1-4	•	•	•	Consent of department head
BRAE 203	Agricultural Systems Analysis	4		•		MATH 118 or equivalent
BRAE 213	Bioengineering Fundamentals	2	•	•	•	MATH 142, CHEM 124
BRAE 216	Fundamentals of Electricity	4	•			BRAE 129, MATH 142
BRAE 232	Agricultural Structures Planning	4			•	BRAE 151, PHYS 132
BRAE 234	Introduction to Mechanical Systems in Agriculture	4			•	PHYS 141
BRAE 236	Principles of Irrigation	4	•			MATH 141,SS 121
BRAE 237	Engineering Surveying I	2	•	•	•	MATH 119 or an understanding of trigonometric functions
BRAE 239	Engineering Surveying	4	•	•	•	Math 119 or equivalent
BRAE 240	Agricultural Engineering Laboratory	1	•	•	•	Consent of instructor
BRAE 244	Precision Farming	4		•		AEPS133,190, 260 or BRAE237/239 Cross listed as AEPS244
BRAE 247	Forest Surveying	2	•	•	•	NR215
BRAE 301	Hydraulic and Mechanical Power Systems	4			•	PHYS 121 or PHYS141
BRAE 302	Servo Hydraulics	4		•		BRAE 216 or BRAE 324 and BRAE 234 or BRAE 301
BRAE 312	Hydraulics	4	•			PHYS 132, ME 211
BRAE 320	Principles of BioResource Engineering	4			•	BRAE 232, BRAE 236, PHYS 132
BRAE 321	Agricultural Safety	3		•		Junior standing
BRAE 324	Principles of Agricultural Electrification	4		•		MATH 119, PHYS 121
BRAE 328	Measurements and Computer Interfacing	4			•	EE321, EE361, computer prog. course
BRAE 331	Irrigation Theory	3		•		BRAE 236, or BRAE 340
BRAE 335	Internal Combustion Engines	4		•		Junior standing
BRAE 337	Landscape Irrigation	4		•		MATH 118 or consent of instructor
BRAE 339	Internship in BRAE	1-12	•	•	•	Consent of internship instructor
BRAE 340	Irrigation Water Management (GE Area F)	4	•	•	•	Junior standing completion GE Area B, and MATH 118 or better
BRAE 342	Agricultural Materials	4	•			PHYS 121, SS 121, MATH 119
BRAE 343	Mechanical Systems Analysis	4		•		BRAE 342
BRAE 344	Fabrication Systems	4			•	BRAE 343
BRAE 345	Aerial Photogrammetry and Remote Sensing	3	•	•		MATH 118
BRAE 348	Energy for a Sustainable Society (GE Area F)	4	•	•	•	Completion of GE Area B and junior standing
BRAE 400	Special Problems for Advanced Undergrads	1-4	•	•	•	Consent of department Head
BRAE 403	Agricultural Systems Engineering	4			•	MATH 242 or MATH 244

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BRAE 405	Chemigation	1			•	BRAE 236 or BRAE 340
BRAE 414	Irrigation Engineering	4			•	BRAE 331 or BRAE 340; BRAE 312 or course in hydraulics w/grade C or better
BRAE 418	Agricultural Systems Management I	4	•			BRAE 203, AGB 301, AGB 310, GE Area B
BRAE 419	Agricultural Systems Management II	4		•		BRAE 418
BRAE 421	Equipment Engineering	3	•			CE 204, ME 212
BRAE 422	Equipment Engineering	4		•		BRAE 421
BRAE 425	Computer Controls for Agriculture	3			•	BRAE 324, CSC 110 or CSC 119 or CSC 232
BRAE 428	Agricultural Robotics and Automation	4		•		BRAE 328
BRAE 432	Agricultural Buildings	4			•	BRAE 342, BRAE 343, PHYS 121
BRAE 433	Agricultural Structures Design	4	•			BRAE 232, CE 204
BRAE 435	Drainage	4		•		BRAE 312, BRAE 331 or BRAE 340 or SS 432 and consent of instructor
BRAE 438	Drip/Micro Irrigation	4		•		BRAE 236 or BRAE 340
BRAE 439	Vineyard Water Management	4				BRAE 236 or BRAE 340
BRAE 440	Agricultural Irrigation Systems	4			•	BRAE 340 or consent of instructor
BRAE 447	Advanced Surveying w/GIS Applications	4			•	BRAE 239
BRAE 448	Bioconversion	4	•			MATH 118 or equivalent
BRAE 460	Senior Project Organization	1	•	•	•	GE A3
BRAE 461	Senior Project	2	•	•	•	BRAE 460
BRAE 462	Senior Project	2	•	•	•	BRAE 461
BRAE 481	Advanced Agricultural Mechanics	2		•		Senior or graduate standing or consent of instructor
BRAE 485	Cooperative Education Experience in BRAE	6	•	•	•	Sophomore standing and consent of instructor
BRAE 495	Cooperative Education Experience in BRAE	12	•	•	•	Sophomore standing & instructor cons.
BRAE 500	Individual Study	1-3	•	•	•	Consent of instructor
BRAE 532	Water Wells and Pumps	4			•	BRAE 312 or equivalent
BRAE 533	Irrigation Project Design	4		•		BRAE 340 or BRAE 312 or equivalent hydraulics/fluid mechanics course
BRAE 599	Thesis in BioResource and Ag Engineering	1-9	•	•	•	Graduate standing and consent of instructor