

BioResource and Agricultural Engineering and Agricultural Systems Management

2009-2010 PROJECTED COURSE OFFERINGS

| 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 | 2 | • | • | | None |
| 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 |
| 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 201 | Enterprise Project | 1-4 | • | • | • | BRAE 129 or consent of instructor |
| BRAE 203 | Agricultural Systems Analysis | 3 | | • | | MATH 118 or equivalent |
| BRAE 213 | Bioengineering Fundamentals | 2 | • | • | • | MATH 142, CHEM 124 |
| BRAE 216 | Fundamentals of Electricity | 4 | • | | | BRAE 128, BRAE 129, MATH 142, PHYS 141 |
| BRAE 226 | Introduction to Principles of BioResource Engineering | | | | | See BRAE 320 |
| BRAE 232 | Agricultural Structures Planning | 4 | | | • | BRAE 151, PHYS 132 |
| BRAE 234 | Introduction to Mechanical Systems in Agriculture | 4 | | | • | BRAE 128, BRAE 129, PHYS 141 |
| BRAE 236 | Principles of Irrigation | 4 | • | | | BRAE 239, MATH 141, SS 121. a computer programming course |
| 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 | 1-4 | • | • | • | Consent of instructor |
| BRAE 247 | Forest Surveying | 2 | • | • | | FNR 215, MAPE score G |
| BRAE 301 | Hydraulic and Mechanical Power Systems | 4 | | | • | PHYS 121 |
| 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 128, BRAE 129, PHYS 131, BIO 213 and BRAE 213 or ENGR 213 or MCRO 221 |
| BRAE 321 | Agricultural Safety | 3 | | | • | Junior standing |
| BRAE 324 | Principles of Agricultural Electrification | 4 | | • | | MATH 119 or MATH 120, PHYS 121 |
| BRAE 328 | Measurements and Computer Interfacing | 4 | | | • | PHYS 206, PHYS 256; a computer programming course |
| BRAE 331 | Irrigation Theory | 3 | | • | | BRAE 236, or BRAE 340 |
| BRAE 335 | Internal Combustion Engines | 4 | | • | | Junior standing |
| BRAE 337 | Landscape Irrigation | 4 | | • | • | SS 121 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 of GE Area A1, A3, and Area B, include MATH 118 |
| BRAE 342 | Agricultural Materials | 4 | • | | | PHYS 121, CHEM 110 or CHEM 111, SS 121 |
| BRAE 343 | Mechanical Systems Analysis | 4 | | • | | MATH 119, BRAE 203, BRAE 301 or concurrent. BRAE 342 Junior standing |

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|----------|--|-------|---|---|---|--|
| BRAE 344 | Fabrication Systems | 4 | | | • | BRAE 343 |
| BRAE 345 | Aerial Photogrammetry and Remote Sensing | 3 | • | • | | MATH 119 |
| 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 Undergraduates | 1-4 | • | • | • | Consent of department Head |
| BRAE 401 | Enterprise Project Management | 1-4 | • | • | • | BRAE 201 or consent of instructor |
| BRAE 403 | Agricultural Systems Engineering | 4 | | | • | ECON 201/211, MATH 242 or MATH 244 |
| BRAE 405 | Chemigation | 1 | | | • | BRAE 236 or BRAE 340 |
| BRAE 414 | Irrigation Engineering | 4 | | | • | BRAE 331 or BRAE 340; BRAE 312 |
| BRAE 415 | Hydrology | | | | | See BRAE 435 |
| BRAE 418 | Agricultural Systems Management I | 4 | • | | | BRAE 203, AGB 301, AGB 310, ENGL 148 |
| BRAE 419 | Agricultural Systems Management II | 4 | | • | | BRAE 418 |
| BRAE 421 | Equipment Engineering | 3 | • | | | BRAE 328, CE 207, 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 or AG 250 |
| BRAE 427 | Agricultural Process Engineering | | | | | No longer offered |
| BRAE 430 | Finite Element Analysis | 3 | | | | CE 204, MATH 242, ME 302 |
| BRAE 432 | Agricultural Buildings | 4 | | | • | BRAE 342, BRAE 343, PHYS 121 |
| BRAE 433 | Agricultural Structures Design | 4 | • | | | BRAE 232, CE 207 |
| BRAE 435 | Drainage | 4 | | • | | BRAE 312, BRAE 331 or BRAE 340 or SS 432 and consent of instructor |
| BRAE 438 | Drip/Micro Irrigation | 4 | | | | See BRAE 439 |
| BRAE 439 | Vineyard Water Management | 4 | | • | | BRAE 236 or BRAE 340 |
| BRAE 440 | Agricultural Irrigation Systems | 4 | | | • | BRAE 340 or consent of instructor |
| BRAE 446 | CAD Software for Land Modeling | | | | | See BRAE 447 |
| BRAE 447 | Advanced Surveying w/GIS Applications | 4 | | | • | BRAE 239 |
| BRAE 448 | Bioconversion | 4 | | • | | MATH 118 or equivalent |
| BRAE 452 | Legal Aspects/Data Accuracy for GIS | | | | | See BRAE 447 |
| BRAE 460 | Senior Project Organization | 1 | • | • | • | For BRAE majors ENGL 149; for ASM majors ENGL 148, junior standing |
| 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 and consent of instructor |
| BRAE 500 | Individual Study | 1-3 | • | • | • | Consent of instructor |
| BRAE 532 | Water Wells and Pumps | 4 | | | • | BRAE 340 or BRAE 312 or equivalent |
| BRAE 533 | Irrigation Project Design | 4 | | • | | BRAE 340, hydraulics/fluid mechanics |
| BRAE 599 | Thesis in BioResource and Ag Engineering | 1-9 | • | • | • | Graduate standing & consent |