

# Course Schedule - Fall 2006

## Agricultural and Biological Engineering

### 100 **Intro to Agr Engineering** Credit: 1 hours.

Introduction to the engineering profession with career opportunities in the agricultural engineering discipline. Interactive class activities include concepts necessary for becoming a successful engineer including time management, design concepts, ethics, and teambuilding. Students become familiar with laboratories, computer facilities, internships and other opportunities that are available to agricultural engineering students. A team design experience is included. Class emphasis on technical communication and problem-solving skills as well as career planning. Approved for both letter and S/U grading.

| CRN   | Type    | Section | Time                | Days | Location                                      | Instructor |
|-------|---------|---------|---------------------|------|---|------------|
| 31263 | lecture | B       | 01:00 PM - 01:50 PM | R    | room 204<br>Agricultural Engr<br>Sciences Bld | Bode, L    |

### 199 **Undergraduate Open Seminar** Credit: 1 to 5 hours.

Experimental course on a special topic in Agricultural Engineering. May be repeated to a maximum of 12 hours.

| CRN                                 | Type              | Section | Time     | Days | Location | Instructor |
|-------------------------------------|-------------------|---------|----------|------|----------|------------|
| 10141                               | independent study |         | ARRANGED |      |          |            |
| 10141: Instructor Approval Required |                   |         |          |      |          |            |

### 221 **Agr & Bio Engineering I** Credit: 4 hours.

Introduction to engineering methods used in the design and management of agricultural, biological and environmental systems. Topics covered include the hydrologic cycle, soil-water properties and relationships, water runoff, surveying, soil erosion, water management, engine power, fluid power, traction and weight transfer, and off-road vehicle systems. Prerequisite: One of MATH 220, MATH 221, MATH 234.

| CRN   | Type       | Section | Time                | Days | Location                                      | Instructor          |
|-------|------------|---------|---------------------|------|---|---------------------|
| 31265 | laboratory | AB1     | 10:00 AM - 11:50 AM | T    | room 248<br>Agricultural Engr<br>Sciences Bld | Kalita, P; Grift, T |
| 31267 | laboratory | AB2     | 08:00 AM - 09:50 AM | T    | room 248<br>Agricultural Engr<br>Sciences Bld | Kalita, P           |
| 31270 | lecture    | AL1     | 09:00 AM - 09:50 AM | MWF  | room 248<br>Agricultural Engr<br>Sciences Bld | Kalita, P; Grift, T |

**295 Independent Study** Credit: 1 to 4 hours.

Individual research, special problems, thesis, development and/or design work under the supervision of a member of the faculty. May be repeated to a maximum of 8 hours.

| CRN                                 | Type              | Section | Time     | Days | Location | Instructor |
|-------------------------------------|-------------------|---------|----------|------|----------|------------|
| 10158                               | independent study |         | ARRANGED |      |          |            |
| 10158: Instructor Approval Required |                   |         |          |      |          |            |

**361 Princ of Off-Road Machines** Credit: 3 hours.

Design and development concepts of agricultural and industrial machines; analysis and synthesis of tillage, planting, harvesting, chemical application, material handling mechanisms, and precision farming tools. Includes laboratory. Prerequisite: ABE 221 and TAM 212.

| CRN   | Type       | Section | Time                | Days | Location                                      | Instructor |
|-------|------------|---------|---------------------|------|---|------------|
| 29647 | laboratory | AB1     | 01:00 PM - 02:50 PM | T    | room 137<br>Agricultural Engr<br>Sciences Bld | Tian, L    |
| 29651 | lecture    | AL1     | 11:00 AM - 11:50 AM | TR   | room 208<br>Agricultural Engr<br>Sciences Bld | Tian, L    |

**396 UG Honors Research or Thesis** Credit: 1 to 4 hours.

Individual research, special problems, thesis, development and/or design work under the direction of the honors advisor. May be repeated to a maximum of 8 hours. Prerequisite: Junior standing, admission to the ACES Honors Program or James Scholar Program in Engineering, and consent of instructor.

| CRN                                 | Type              | Section | Time     | Days | Location | Instructor |
|-------------------------------------|-------------------|---------|----------|------|----------|------------|
| 10163                               | independent study |         | ARRANGED |      |          |            |
| 10163: Instructor Approval Required |                   |         |          |      |          |            |

**420 Kinem and Dynm of Mechani Sys** Credit: 3 hours.

Same as ME 440. See ME 440.

| CRN   | Type               | Section | Time                | Days | Location                                   | Instructor   |
|-------|--------------------|---------|---------------------|------|--|--------------|
| 36870 | lecture-discussion | N       | 10:00 AM - 11:50 AM | TR   | room 153<br>Mechanical<br>Engineering Bldg | Dankowicz, H |

**430 Project Management** Credit: 2 hours.

Engineering team effectiveness; project definition; assessing related technologies; marketing and business planning related to engineering; budgeting and financial analyses of engineering projects; safety, ethics and environmental considerations; intellectual property; engineering proposal presentation. Same as TSM 430. Prerequisite: Senior or graduate standing, or consent of instructor.

| CRN   | Type               | Section | Time                | Days | Location                                      | Instructor |
|-------|--------------------|---------|---------------------|------|---|------------|
| 36669 | lecture-discussion | A       | 02:00 PM - 03:50 PM | MW   | room 204<br>Agricultural Engr<br>Sciences Bld | Zahos, S   |
| 40242 | lecture-discussion | B       | 04:00 PM - 05:50 PM | MW   | room 204<br>Agricultural Engr<br>Sciences Bld | Zahos, S   |

**440 Applied Statistical Methods I** Credit: 4 hours.

Same as ANSC 440, CPSC 440, FSHN 440, and NRES 440. See CPSC 440.

Students must register for one lab-discussion and one lecture section.

| CRN   | Type                  | Section | Time                | Days | Location                 | Instructor |
|-------|-----------------------|---------|---------------------|------|--------------------------|------------|
| 33575 | lecture               | AL1     | 08:00 AM - 09:20 AM | TR   | room 213<br>Gregory Hall | Bollero, G |
| 33576 | laboratory-discussion | AY1     | 01:00 PM - 02:50 PM | T    | room N120<br>Turner Hall | Bollero, G |
| 34029 | laboratory-discussion | AY2     | 05:00 PM - 06:50 PM | T    | room N120<br>Turner Hall | Bollero, G |
| 34047 | laboratory-discussion | AY3     | 01:00 PM - 02:50 PM | W    | room N120<br>Turner Hall | Bollero, G |
| 34061 | laboratory-discussion | AY4     | 03:00 PM - 04:50 PM | T    | room N120<br>Turner Hall | Bollero, G |
| 34085 | laboratory-discussion | AY5     | 10:00 AM - 11:50 AM | T    | room N120<br>Turner Hall | Bollero, G |

**459 Drainage and Water Management** Credit: 0 to 4 hours.

Design, construction, performance, and maintenance of surface, subsurface, and open ditch agricultural drainage systems. Includes laboratory. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent registration in TAM 335.

| CRN   | Type       | Section | Time                | Days | Location                                      | Instructor |
|-------|------------|---------|---------------------|------|---|------------|
| 29655 | laboratory | AB3     | 03:00 PM - 05:50 PM | W    | room 242<br>Agricultural Engr<br>Sciences Bld | Cooke, R   |

|   |            |     |                     |     |   |          |
|---|------------|-----|---------------------|-----|---|----------|
| 29655: 3 hours                                  |            |     |                     |     |   |          |
| 39805   | laboratory | AB4 | 03:00 PM - 05:50 PM | W   | room 242<br>Agricultural Engr<br>Sciences Bld | Cooke, R |
| 39805: 4 hours Restricted to graduate students. |            |     |                     |     |   |          |
| 47972   | laboratory | AB5 | 10:00 AM - 12:50 PM | T   | room 220<br>Agricultural Engr<br>Sciences Bld | Cooke, R |
| 47972: 3 hours                                  |            |     |                     |     |   |          |
| 47973   | laboratory | AB6 | 10:00 AM - 12:50 PM | T   | room 220<br>Agricultural Engr<br>Sciences Bld | Cooke, R |
| 47973: 4 hours                                  |            |     |                     |     |   |          |
| 29657   | lecture    | AL1 | 11:00 AM - 11:50 AM | MWF | room 208<br>Agricultural Engr<br>Sciences Bld | Cooke, R |

**466 *Engineering Off-Road Vehicles* Credit: 3 hours.**

Engineering aspects of design and application of off-road vehicles for farm and construction use; thermodynamics of engines; measurement of power and efficiencies; power transmission and traction; chassis mechanics; and operator environment. Includes laboratory. Prerequisite: ME 300 or equivalent.

| CRN   | Type       | Section | Time                | Days | Location                                      | Instructor |
|-------|------------|---------|---------------------|------|---|------------|
| 31273 | laboratory | AB1     | 03:00 PM - 05:50 PM | T    | room 242<br>Agricultural Engr<br>Sciences Bld | Hansen, A  |
| 31277 | laboratory | AB2     | 03:00 PM - 05:50 PM | R    | room 242<br>Agricultural Engr<br>Sciences Bld | Hansen, A  |
| 31280 | lecture    | AL1     | 10:00 AM - 10:50 AM | TR   | room 204<br>Agricultural Engr<br>Sciences Bld | Hansen, A  |

**476 *Indoor Air Quality Engineering* Credit: 3 hours.**

Principles and applications of indoor air quality. Topics include particle mechanics, gas kinetics, air quality sampling principles and techniques, air cleaning technologies (i.e. filters, cyclones, electrostatic precipitation) for indoor environments, and ventilation effectiveness. Includes laboratory. Prerequisite: PHYS 213, MATH 385, TAM 335 or equivalent.

| CRN   | Type       | Section | Time                | Days | Location                                      | Instructor |
|-------|------------|---------|---------------------|------|---|------------|
| 29660 | laboratory | AB1     | 03:00 PM - 04:50 PM | W    | room 248<br>Agricultural Engr<br>Sciences Bld | Zhang, Y   |

|       |         |     |                     |    |   |          |
|-------|---------|-----|---------------------|----|---|----------|
| 29662 | lecture | AL1 | 09:00 AM - 09:50 AM | TR | room 242<br>Agricultural Engr<br>Sciences Bld | Zhang, Y |
|-------|---------|-----|---------------------|----|---|----------|

**482 *Package Engineering*** Credit: 3 hours.

Same as FSHN 469. See FSHN 469.

| CRN   | Type    | Section | Time                | Days | Location                                      | Instructor |
|-------|---------|---------|---------------------|------|---|------------|
| 37689 | lecture | A       | 12:00 PM - 12:50 PM | MWF  | room 272<br>Agricultural Engr<br>Sciences Bld | Morris, S  |

**489 *Process Des for Corn Milling*** Credit: 3 hours.

Engineering and scientific principles involved in the major corn fractionation processes of wet milling, dry milling and alkali cooking, including structural and diffusional characteristics of corn, steeping phenomena and chemical and mechanical fractionation methods. Principles of process design and mill operation. Prerequisite: ME 300 or ME 320 or CHBE 421, or consent of instructor.

| CRN   | Type               | Section | Time                | Days | Location                                      | Instructor |
|-------|--------------------|---------|---------------------|------|---|------------|
| 29665 | lecture-discussion | A       | 09:00 AM - 09:50 AM | MWF  | room 208<br>Agricultural Engr<br>Sciences Bld | Eckhoff, S |

**498 *Special Topics*** Credit: 1 to 4 hours.

Group discussion or an experimental course on a special topic in agricultural engineering. May be repeated to a maximum of 16 hours.

| CRN                                 | Type              | Section | Time     | Days | Location | Instructor |
|-------------------------------------|-------------------|---------|----------|------|----------|------------|
| 10169                               | independent study |         | ARRANGED |      |          |            |
| 10169: Instructor Approval Required |                   |         |          |      |          |            |
| 46152                               | lecture           | S01     | ARRANGED |      |          |            |

**501 *Graduate Research I*** Credit: 1 hours.

Basic research orientation, research methods, presentation skills, laboratory practices, case studies, and professional and ethical conduct. Prerequisite: Graduate standing.

| CRN   | Type               | Section | Time                | Days | Location                      | Instructor |
|-------|--------------------|---------|---------------------|------|-------------------------------|------------|
| 39806 | lecture-discussion | A       | 01:00 PM - 01:50 PM | F    | room 208<br>Agricultural Engr | Zhang, Y   |

|  |  |  |  |  |              |  |
|--|--|--|--|--|--------------|--|
|  |  |  |  |  | Sciences Bld |  |
|--|--|--|--|--|--------------|--|

**594 Graduate Seminar** Credit: 0 hours.

Presentations of thesis research by graduate students; other presentations on teaching or current research issues related to agriculture, biology, and engineering. Approved for S/U grading only. May be repeated up to a maximum of 6 times. Prerequisite: Graduate standing.

| CRN   | Type               | Section | Time                | Days | Location                                      | Instructor |
|-------|--------------------|---------|---------------------|------|---|------------|
| 47356 | lecture-discussion | LB1     | 12:00 PM - 12:50 PM | F    | room 204<br>Agricultural Engr<br>Sciences Bld | Zhang, Y   |

**597 Independent Study** Credit: 1 to 4 hours.

Individual investigations or studies of any phases of agricultural engineering selected by the student and approved by the advisor and the faculty member who will supervise the study. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

| CRN                                 | Type              | Section | Time     | Days | Location | Instructor |
|-------------------------------------|-------------------|---------|----------|------|----------|------------|
| 10174                               | independent study |         | ARRANGED |      |          |            |
| 10174: Instructor Approval Required |                   |         |          |      |          |            |

**599 Thesis Research** Credit: 0 to 16 hours.

May be repeated. Approved for S/U grading only.

| CRN                                 | Type              | Section | Time     | Days | Location | Instructor  |
|-------------------------------------|-------------------|---------|----------|------|----------|-------------|
| 10177                               | independent study |         | ARRANGED |      |          |             |
| 10177: Instructor Approval Required |                   |         |          |      |          |             |
| 48298                               | independent study | KB      | ARRANGED |      |          | Bhalerao, K |