COLLEGE OF AGRICULTURE AND LIFE SCIENCES
DWIGHT LOOK COLLEGE OF ENGINEERING

BIOLOGICAL & AGRICULTURAL ENGINEERING DEPARTMENT

TEXAS A&M UNIVERSITY

Memorandum

October 23, 2014

To: Dr. Robert Knight, Chair
COALS Undergraduate Programs Council

From: Ashlea Schroeder
Senior Academic Advisor I
Biological and Agricultural Engineering

Ashlea Schroeder

Through: Dr. Stephen W. Searcy
Department Head
Biological and Agricultural Engineering

Patricia Smith for
Stephen W. Searcy

Subject: Request for approval of B.S. curriculum changes in Biological and Agricultural Engineering

We respectfully request that the proposed modifications to the B.S. curriculum in Biological and Agricultural Engineering described herein be placed on the agenda of the next COALS Undergraduate Programs Council meeting and COE Undergraduate Advisor's meeting for approval.

Biological and Agricultural Engineering revisions for catalog 138 (Fall 2015)

1. Remove the "CBK" wording from the catalog and degree evaluation
2. Remove BAEN 150 from the degree program
3. Altering contact hours for BAEN 301; reducing the course credits from 4 to 3
4. Altering contact hours for BAEN 302; reducing the course credits from 4 to 3
5. Creating BAEN 201, Analysis of Biological and Agricultural Engineering Problems, to replace BAEN 150 (using one extra hour from each 301, 302, and the hour from 150)

If you have any questions or need additional information, please let me know.

Attachments:

- Biological and Agricultural Engineering Curriculum as proposed
- Current catalog curriculum with handwritten edits
- Current Howdy degree evaluation with handwritten edits
- Departmental Request for Change in Course:
  - BAEN 301 (syllabus included)
  - BAEN 302 (syllabus included)
- Departmental Request for New Course:
  - BAEN 201 (syllabus included)

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College Station, TX 77843-211

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www.baen.tamu.edu

Texas A&M University
Request for a Change in Curriculum
Undergraduate • Graduate • Professional

1. Program request type: ☑Undergraduate ☐Graduate ☐First Professional *(ex., DVM, JD, MD, etc.)*

2. Request change for: ☑Degree Program ☐Minor ☐Certificate

3. Request submitted by *(Department or Program Name)*: Biological and Agricultural Engineering

4. Program Designation and Name *(e.g., B.A. in History, Minor in History, Certificate in European Union)*: B.S. in Biological and Agricultural Engineering

5. Brief description of change:
Removing Common Body of Knowledge (CBK) wording from the undergraduate catalog and the degree evaluation.

6. Rationale for change:
CBK was removed from all engineering programs for 2014-2015. This was missed when updating curriculum changes last year.

Use the checkboxes below to make sure that all information is included.

7. a. Proposed curriculum attached. ☑Yes ☐No

   b. Current catalog curriculum with handwritten edits attached. ☑Yes ☐No

   c. Current Howdy degree evaluation with handwritten edits attached. ☑Yes ☐No

   Please make sure the attached proposed curriculum, catalog and Howdy degree evaluation match.

8. a. Will degree program hours change (increase/decrease) due to the proposed curriculum changes? ☐Yes ☑No

   b. If yes, degree program hours will change from: ________ to: ________

   c. If yes, is the Texas Higher Education Coordinating Board form attached? ☐Yes ☐No
   http://www.thecb.state.tx.us/index.cfm?objectid=A0F9F7FA-9A92-4F11-2756AD3BBFF01D60

9. If proposed changes affect other unit(s), are letters of support attached? ☐Yes ☐No

IMPORTANT NOTE: Curriculum changes submitted through the approval process and **fully approved** by February (*December-UCC/GC, January-Faculty Senate, February-President*) will be effective in the next academic year. Changes requiring approval beyond the University should complete the internal approval process early in the fall semester whenever possible in order to ensure timely implementation.

Approval recommended by: Patricia Smith for

Stephen W. Searcy Stephen W. Searcy	10/7/2014	Kim Dooley	
Department Head or Program Chair *(Type Name & Sign)*	Date	Dean of College	Date
Bob Knight			
Chair, College Review Committee	Date	Chair, GC or UCC	Date

Biological and Agricultural Engineering
Proposed Curriculum for Catalog 2015-2016

Freshman Year: Fall

CHEM 107 General Chemistry for Engr Students	3
CHEM 117 General Chemistry for Engr Students Lab	1
ENGR 111 Foundations of Engineering I	2
MATH 151 Engineering Mathematics I	4
PHYS 218 Mechanics	4
	14

Freshman Year: Spring

BIOL 113 Essentials in Biology	4
ENGL 104 Composition & Rhetoric	3
ENGR 112 Foundations of Engineering II	2
MATH 152 Engineering Mathematics II	4
PHYS 208 Electricity and Optics	4
	17

Sophomore Year: Fall

BAEN 201	3
ENGL 210 Scientific & Technical Writing	3
MATH 251 Engineering Mathematics III	3
MEEN 221 Statics and Particle Dynamics	3
MEEN 222 Materials Science	3
	15

Sophomore Year: Spring

BAEN 301 Biological and Agri Engr Fundamentals I	3
BAEN 320 Engineering Thermodynamics	3
CHEM 222 Elements of Organic & Biological Chem	3
CVEN 305 Mechanics of Materials	3
MATH 308 Differential Equations	3
Political Science elective[1]	3
	18

Junior Year: Fall

BAEN 302 Biological and Agri Engr Fundamentals II	3
BAEN 340 Fluid Mechanics	3
BAEN 354 Engr Properties of Biological Materials	3
BAEN 375 Design Fundamentals for Agri Machines & Structures	3
ECEN 215 Principles of Electrical Engineering	3
	15

Junior Year: Spring

BAEN 365 Unit Operations for Biological & Agri Engr	3
BAEN 366 Transport Processes in Biological Systems	3
BAEN 370 Measurement and Control of Biological Systems and Agri Processes	3
MATH Elective[4]	3
American History Elective[1, 2]	3
Political Science elective[1]	3
	18

Senior Year: Fall

BAEN 479 Biological and Agri Engineering Design I	3
ENGR 482[3] Ethics and Engineering	or
PHIL 482[3] Ethics and Engineering	3
BAEN Elective[4]	3
ENGR Elective[4]	3
Social and Behavioral Science Elective[1,2]	3
	15

Senior Year: Spring

BAEN 480[3] Biological and Agri Engineering Design II	3
BAEN Elective[4]	3
Technical Elective[4]	3
American History Elective[1, 2]	3
Creative Arts Elective[1,2]	3
	15

Total Degree Hours	127

Notes:

1)To be selected from the University Core Curriculum

2) The 6 hours of international and cultural diversity courses, as required for graduation, may be met in the curriculum. Students may select Language, Philosophy and Culture, Creative Arts, Technical Electives, or American History Electives that also meet the ICD requirement.

3) All undergraduate students must take at least two (2) specific courses in their major designated as writing intensive (W). This course is an approved W course.

4) MATH, BAEN, ENGR, and Technical electives must be selected in consultation with the student's advisor and from the current list of approved electives published by the department.

Curriculum in
Biological and Agricultural Engineering

Biological and agricultural engineers apply their knowledge of physical and biological sciences, mathematics, engineering principles and engineering design to the production and processing of food and fiber, to the preservation of environmental quality, to biological systems and processes, and to machine systems that interface with all of these. Because of their broad general engineering background, biological and agricultural engineering graduates are sought by a wide variety of employers including environmental consulting firms, equipment manufacturers, crop storage and handling industries, the cotton and forest products industries, food and feed processing industries, animal production industries, biotechnology companies, electric utility companies, chemical companies, and governmental agencies. Biological and agricultural engineers make significant contributions to meeting many basic needs of society such as maintaining food quality, quantity and safety; improving environmental quality; and enhancing the quantity and quality of our water resources.

The Biological and Agricultural Engineering Department provides quality education, research and outreach in engineering and technology for the world's agricultural, biological, environmental and food systems. Our undergraduate programs provide a high quality education for engineering and systems management students to fulfill the needs of industries we serve and advance our reputation as a world leader in engineering and systems management education.

The biological and agricultural engineering program develops graduates who can pursue engineering careers in industry, academia, consulting or government. The curriculum is designed:

- to produce graduates who are prepared to become practicing biological and agricultural engineers, many of whom will become registered professional engineers;
- to produce graduates to serve the engineering needs of clientele in environmental and natural resources, machine systems, food processing, bioprocessing, and agricultural production and processing; and
- to produce graduates who continue to be engaged in professional development.

Students learn to apply fundamental knowledge of biological and physical sciences, mathematics, and engineering principles to formulate and solve engineering problems. Engineering design is integrated throughout the curriculum, along with opportunities to develop communication, learning, and teamwork skills, culminating in a capstone design experience. Electives in the curriculum allow the student to develop an emphasis in one of the following areas:

- **Environmental and Natural Resources Engineering**—design and management of systems affecting soil, water, and air resources.
- **Renewable Energy Engineering**—design and development of biomass, wind and solar energy systems.
- **Food and Bioprocess Engineering**—design and development of systems for processing and handling of food and agricultural products and processes involving cells, enzymes, or other biological components.
- **Machine Systems Engineering**—design and development of machines and machine systems for food, feed and fiber production and processing.

Students select courses with the assistance of faculty advisors in an individualized advising system. Faculty members also assist with professional development and job placement for students.

The biological and agricultural engineering program is jointly administered by the College of Agriculture and Life Sciences and the Dwight Look College of Engineering, and the curriculum is fully accredited by the Engineering Accreditation Commission of ABET, Inc., www.abet.org. The department is one of the largest in North America and is consistently ranked as one of the top programs in the nation.

All biological and agricultural engineering majors are required to earn a grade of C or better in ~~each of the Common Body of Knowledge (CBK) courses (CHEM 107/CHEM 117, ENGL 104, ENGR 111 and ENGR 112, MATH 151 and MATH 152, and PHYS 218 and PHYS 208) and in each additional~~ all engineering, math, science and technical elective course taken to satisfy degree requirements.

FRESHMAN YEAR

Chem 107 (3-0)-3
Chem 117 (0-3)-1

First Semester	(Th-Pr)	Cr	Second Semester	(Th-Pr)	Cr
~~BAEN 150 Intro. to Biol. and Ag. Engineering Design~~	~~(0-2)~~	~~1~~	~~CHEM 107 Gen. Chem. for Eng. Students~~	~~(3-0)~~	~~3~~
~~BIOL 113 Essentials in Biology~~	~~(3-3)~~	~~4~~	~~CHEM 117 Gen. Chem. for Eng. Stu. Lab.~~	~~(0-3)~~	~~1~~
ENGR 111 Foundations of Engr. I	(1-3)	2	ENGL 104 Comp. and Rhetoric	(3-0)	3
MATH 151 Engineering Math. I	(3-2)	4	ENGR 112 Foundations of Engr. II	(1-3)	2
PHYS 218 Mechanics	(3-3)	4	MATH 152 Engineering Math. II	(3-2)	4
			~~Government/Political science elective[1]~~		~~3~~
		14 ~~15~~			17 ~~18~~

Biol 113 (3-3)-4
Phys 208 (3-3)-4

SOPHOMORE YEAR

BAEN 201 (2-3)-3
ENGL 210 (3-0)-3

First Semester	(Th-Pr)	Cr	Second Semester	(Th-Pr)	Cr
~~CHEM 222 Elements of Org. Biol. Chem.~~	~~(3-0)~~	~~3~~	BAEN 301 Biol. and Ag. Engr. Fund. I	(2-3) ~~(3-3)~~	~~4~~ 3
MATH 251 Engineering Math. III	(3-0)	3	BAEN 320 Eng. Thermodynamics	(2-2)	3
MEEN 221 Statics and Particles Dynamics	(3-0)	3	CVEN 305 Mechanics of Materials	(3-0)	3
MEEN 222 Materials Science	(3-0)	3	~~ENGL 210 Technical and Business Writing~~	~~(3-0)~~	~~3~~
~~PHYS 208 Electricity and Optics~~	~~(3-3)~~	~~4~~	MATH 308 Differential Equations	(3-0)	3
		15 ~~16~~			18 ~~18~~

CHEM 222 (3-0)-3
Govt/Political Science elective-3

JUNIOR YEAR

First Semester	(Th-Pr)	Cr	Second Semester	(Th-Pr)	Cr
BAEN 302 Biol. and Ag. Engr. Fund. II	(2-3) ~~(3-3)~~	~~4~~ 3	BAEN 365 Unit Ops. for Biol. and Ag. Engr.	(2-3)	3
BAEN 340 Fluid Mechanics	(3-0)	3	BAEN 366 Transport Processes in Biological Systems	(3-0)	3
BAEN 354 Engr. Properties of Biological Materials	(2-2)	3	BAEN 370 Meas. and Control of Bio. Sys. and Ag. Processes	(2-2)	3
BAEN 375 Des. of Ag. Mach. and Struc.	(3-0)	3	American History elective[1,2]		3
ECEN 215 Prin. of Electrical Engr.	(2-2)	3	Government/Political science elective[1]		3
		15 ~~16~~	Mathematics elective[4]		3
					18

SENIOR YEAR

First Semester	(Th-Pr)	Cr	Second Semester	(Th-Pr)	Cr
BAEN 479 Biol. and Ag. Engr. Design I	(3-0)	3	BAEN 480 Biol. and Ag. Engr. Design II [3]	(1-5)	3
ENGR 482/PHIL 482 Ethics and Engr.[3]	(2-2)	3	BAEN elective[4]		3
BAEN elective[4]		3	American history elective[1,2]		3
ENGR elective[4]		3	Creative arts elective[1,2]		3
Social and behavioral science elective[1,2]		3	Technical elective[4]		3
		15			15

total hours 127

NOTES: ~~Grade Requirement: A grade of C or better is required for all Common Body Knowledge (CBK) courses (MATH 151, MATH 152, PHYS 208, PHYS 218, CHEM 107, CHEM 117, ENGL 104, ENGR 111, ENGR 112) or equivalents.~~

1. To be selected from the University Core Curriculum. (See page 17).
2. The 6 hours of international and cultural diversity courses, as required for graduation, may be met in the curriculum. Students may select Language, Philosophy and Culture, Creative Arts, Technical Electives, or American History Electives that also meet the ICD requirement.
3. All undergraduate students must take at least two (2) specific courses in their major designated as writing intensive.
4. BAEN, ENGR, MATH, and Technical electives must be selected in consultation with the student's advisor and from the current list of approved electives published by the department.

The following certificates from the Dwight Look College of Engineering are available for students pursuing this degree: Business Management, Energy Engineering, Engineering Project Management, Engineering Honors, International Engineering, Safety Engineering and Engineering Therapeutics Manufacturing (see descriptions beginning on page 337).

Curriculum in
Community Development

The Department of Recreation, Park and Tourism Sciences offers courses leading to a Bachelor of Science degree in Community Development. This major is an interdisciplinary program. The curriculum provides students with theoretical, statistical, decision-making and communication skills that they can effectively apply in federal and state governmental agencies, community planning firms, municipal departments, marketing firms, economic development organizations, non-profits and other professional settings. The program will enhance students' abilities to: understand, collect and analyze different kinds of data; work with community leaders, groups and the public; identify and mobilize necessary resources for development processes; and assess outcomes and impacts of community change and development on local populations. Graduates with a Community Development major will be able to apply their knowledge and skills to issues including institutional development; human capacity building; economic development; youth development; poverty; welfare-to-work; water quality; land use planning; and other issues involving the mobilization of, and collaboration with, diverse community groups.

Students who select this major will participate in a common set of core courses in the Department of Recreation, Park and Tourism Sciences. These courses emphasize the importance of parks, recreation, tourism, and youth-oriented programs to community development processes and strategies. In addition, they will enroll in courses specifically required for the community development major. Finally, the program offers a variety of electives that cover a range of thematic areas which will allow students of this major to specialize in their preferred area of community development.

University Core Curriculum

Courses	(Th-Pr)	Cr
Communication (6 hours)		
COMM 203 Public Speaking	(3-0)	3
ENGL 104 Composition and Rhetoric	(3-0)	3

Detail Requirements

Oct 03, 2014 02:23 pm

Viewing: Degree Evaluation (DEGEVAL, , Email)
Change Student

Information for Degree Evaluation
This is NOT an official evaluation.

Program Evaluation

Limitation Correspondence: No more than 12 hours of correspondence earned through an accredited institution may be used for an undergraduate degree.
Limitation Combination: Maximum combination of 18 hours of 481, 482, 485 and/or 491 courses may be used for an undergraduate degree.

Program :	BS BAEN	**Catalog Term :**	Fall 2014 - College Station
Campus :	College Station	**Evaluation Term :**	Spring 2015 - Qatar
College :	Agriculture & Life Sciences	**Expected Graduation Date :**	
Degree :	Bachelor of Science	**Request Number :**	6
Level :	Undergraduate	**Results as of :**	Oct 03, 2014
Majors :	Biological & Agricultural Engr	**Minors :**	
Departments :	Biological & Agricultural Eng	**Concentrations :**	

	Met	**Credits Required**	**Used**	**Courses Required**	**Used**
Total Required :	No	127.000	0.000		0
Program GPA :	Yes	.00	.00		
Overall GPA :	No	2.00	.00		
Other Course Information					
Transfer :			0.000		0

This is NOT an official evaluation.

Area : **Major Coursework (42.000 credits) - Not Met**
Description : A grade of "C" or better must be maintained in all major coursework.

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	BAEN ~~150~~ 201 Must make a grade of 'C' or better.													
No	AND	B.	BAEN 301 Must make a grade of 'C' or better.													
No	AND	C.	BAEN 302 Must make a grade of 'C' or better.													
No	AND	D.	BAEN 320 Must make a grade of 'C' or better.													
No	AND	E.	BAEN 340 Must make a grade of 'C' or better.													
No	AND	F.	BAEN 354 Must make a grade of 'C' or better.													
No	AND	G.	BAEN 365 Must make a grade of 'C' or better.													
No	AND	H.	BAEN 366 Must make a grade of 'C' or better.													
No	AND	I.	BAEN 370 Must make a grade of 'C' or better.													

No	AND	J.	BAEN 375 Must make a grade of 'C' or better.	
No	AND	K.	BAEN 479 Must make a grade of 'C' or better.	
No	AND	L.	BAEN 480 Must make a grade of 'C' or better.	
No	AND	M.	400-Level BAEN Elect 6hrs Select from BAEN 400-478, 485, 489. Must make a grade of 'C' or better.	

Total Credits and GPA 0.000 .00

unofficial evaluation

Area Supporting Coursework (22.000 credits) - Not Met :

Met	Condition	Rule	Subject Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	ENGR 111 Must make a grade of 'C' or better.												
No	AND	B.	ENGR 112 Must make a grade of 'C' or better.												
No	AND	C.	MEEN 221 Must make a grade of 'C' or better.												
No	AND	D.	MEEN 222 Must make a grade of 'C' or better.												
No	AND	E.	ECEN 215 Must make a grade of 'C' or better.												
No	AND	F.	CVEN 305 Must make a grade of 'C' or better.												
No	AND	G.	ENGR Upper-Level Elect 6hrs Select from AERO 300-499; BAEN 300-478, 486, 489; BMEN 300-499; CHEN 300-499; CVEN 300-499; ECEN 300-499; ISEN 300-499; MEEN 300-499; NUEN 300-499; OCEN 300-499; PETE 300-499; SENG 300-499 or up to 3 hours of departmental approved technical electives may be used to satisfy this requirement. Must make a grade of 'C' or better.												

Total Credits and GPA 0.000 .00

unofficial evaluation

Area Communication (6.000 credits) - Not Met :

Met	Condition	Rule	Subject Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	ENGL 104 Must make a grade of 'C' or better.												
No	AND	B.	ENGL 210												

Total Credits and GPA 0.000 .00

unofficial evaluation

Area Mathematics (17.000 credits) - Not Met :

Met	Condition	Rule	Subject Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	MATH 151 Must make a grade of 'C' or better.												
No	AND	B.	MATH 152 Must make a grade of 'C' or better.												

No	AND	C.	MATH 251 Must make a grade of 'C' or better.
No	AND	D.	MATH 308 Must make a grade of 'C' or better.
No	AND	E.	Math Elective 3hrs Select from AERO 320; CHEN 320; CVEN 302; MATH 304, 417; MEEN 357, STAT 211. Must make a grade of 'C' or better.

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : Life and Phyiscal Sciences (19.000 credits) - Not Met

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Chemistry Rqmt 4hrs Take CHEM 107 and 117. Must make a grade of 'C' or better.			
No	AND	B.	PHYS 218 Must make a grade of 'C' or better.			
No	AND	C.	PHYS 208 Must make a grade of 'C' or better.			
No	AND	D.	CHEM 222			
No	AND	E.	Biology Rqmt 4hrs Take BIOL 113.			

Must make a grade of "C" or better

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : Language, Philosophy& Culture (3.000 credits) - Not Met

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Lang, Phil, & Culture 3hrs Select from ENGR 482 or PHIL 482. Must make a grade of 'C' or better.			

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : Creative Arts (3.000 credits) - Not Met

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Creative Arts Requirement Select three hours from any course with the Creative Arts attribute [KCRA].			

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : Social and Behavioral Sciences (3.000 credits) - Not Met

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Social Science Rqmt 3hrs Select from courses with the Social and Behavioral Science attribute [KSOC].			

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : **Citizenship (12.000 credits) - Not Met**

Description : Completion of 4 semesters of Upper-Level ROTC may be substituted for 3 hours of American History and 3 hours of Political Science.

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	American History Rqmt 6hrs													
			Select from any course with the [KHIS] attribute.													
No	AND	B.	Political Science Rqmt 6hrs													
			Take POLS 206 and POLS 207.													

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : **Work Not Applied - Met**

Description : See advisor for acceptable substitutions.

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	Courses not applied													

Total Credits and GPA 0.000 .00

unofficial evaluation

~~**Area : Common Body of Knowledge (CBK) - Not Met**~~

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	MATH 151													
No	AND	B.	MATH 152													
No	AND	C.	PHYS 218													
No	AND	D.	PHYS 208													
No	AND	E.	CHEM 107													
No	AND	F.	CHEM 117													
No	AND	G.	ENGL 104													
No	AND	H.	ENGR 111													
~~No~~	~~AND~~	~~I.~~	~~ENGR 112~~													

REMOVE

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : University Writing Requirement - Not Met

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term	Subject	Course	Title	Attribute	Credits	Grade	Source
No		A.	Writing Requirement													
			Two courses required. Only sections of BAEN 480; ENGR 482; and PHIL 482; may be used to satisfy this requirement.													

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : Int'l & Cult Diversity - Not Met

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Int'l & Cultural Diversity 6hr Select from courses with the International and Cultural Diversity attribute [UICD] (except sections of BUSN 289 with the UWRT attribute).			

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : Foreign Language - Not Met

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Foreign Language Rqmt Complete one of the following: 1. Two years of the same foreign language in High School. 2. A two semester sequence of the same foreign language for University credit.			

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : Residence Requirement - Not Met

Description : A minimum of 36 hours of 300-400 level coursework must be completed at Texas A&M University. 12 hours must be in the major field.

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Residence - Major 12hrs Select from AGSM 300-499; BAEN 300-499.			
No	AND	B.	Residence 300-499 24hrs Select from any 300-400 level course at Texas A&M.			

Total Credits and GPA 0.000 .00

unofficial evaluation

Area : GPR-Major - Not Met

Description : A minimum GPR of 2.000 is required in all major field of studies courses.

Met	Condition	Rule	Subject Attribute Low High	Required Credits	Required Courses	Term Subject Course Title Attribute Credits Grade Source
No		A.	Major GPR 28+hrs Includes BAEN 100-499.			

Total Credits and GPA 0.000 .00

unofficial evaluation

Back to Display Options

Print

Texas A&M University
Departmental Request for a Change in Course
Undergraduate ♦ Graduate ♦ Professional

• Submit original form and attachments •

Form Instructions

1. Course request type: ☑ Undergraduate ☐ Graduate ☐ First Professional *(DDS, MD, JD, PharmD, DVM)*
2. Request submitted by *(Department or Program Name)*: Department of Biological and Agricultural Engineering
3. Course prefix, number and complete title of course: BAEN 301 Biological and Agricultural Engineering Fundamentals I

Attach a brief supporting statement for changes made to items 4a thru 4d, and 10 below.

4. Change requested
   a. Prerequisite(s): From: ______ To: ______
   b. Withdrawal (reason): ______
   c. Cross-list with: ______

   Cross-listed courses require the signature of both department heads.

   d. Change in course title and description. Enter complete current course title and current course description in item 9; enter proposed course title and proposed course description in item 10. Complete item 11a and b for a change in title.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 11a and b. **Attach a course syllabus.**
5. Is this an existing core curriculum course? ☐ Yes ☐ No
6. If grade type is changing for existing course, indicate the new grade type: ☐ Grade ☐ S/U ☐ P/F (CLMD)
7. If this course will be stacked, please indicate the course number of the stacked course: ______
8. ☐ I verify that I have reviewed the FAQ for *Export Control Basics for Distance Education* (http://vpr.tamu.edu/resources/export-controls/export-controls-basics-for-distance-education).
9. Complete current course title and current catalog course description:
10. Complete proposed course title and proposed catalog course description (not to exceed 50 words):
11. a. As currently in course inventory:

Prefix	Course #	Title (excluding punctuation)
BAEN	301	BIO & AG ENGR FUND I

Lect.	Lab	Other	SCH	CIP and Fund Code	Admin. Unit	FICE Code						Level
3.00	3.00		4.00	1403010006	0433	0	0	3	6	3	2	3

b. Change to:

Prefix	Course #	Title (excluding punctuation)
BAEN	301	BIO & AG ENGR FUND I

Lect.	Lab	Other	SCH	CIP and Fund Code	Admin. Unit	Acad. Year			FICE Code					
2.00	3.00		3.00	1403010006	0433	15	-	16	0	0	3	6	3	2

Level 3

Approval recommended by:

Stephen W. Searcy Patricia Smith for Stephen W. Searcy 10-28-14
Department Head or Program Chair *(Type Name & Sign)* Date

Bob Knight
Chair, College Review Committee Date

Department Head or Program Chair *(Type Name & Sign)* Date
(if cross-listed course)

Kim Dooley
Dean of College Date

Chair, GC or UCC Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Date

Effective Date

Course Syllabus
BAEN 301, Biological and Agricultural Engineering Fundamentals I
***Spring* 2014**

Instructor: Dr. Sandun Fernando, P.E.
303 C Scoates Hall
845-9793
sfernando@tamu.edu

TA: Mr. Nalin Samarasinghe
Email: nalin1984@neo.tamu.edu

Meeting Times:
Lecture: Tuesdays and Thursdays from 9.35AM-10.25AM in SCTS 317
Laboratory: Sec. 501 Tuesdays 2.40PM – 5.30PM SCTS 237, AEPM 104 or TBA
Sec. 502 Thursdays 2.40PM – 5.30PM SCTS 237, AEPM 104 or TBA
Soil and water laboratories will be conducted in the field and the locations will be announced in due course.
Office Hours: By Appointment Only

Catalog Description
Fundamental engineering concepts related to agricultural systems including the environment (soil, water, and air), plant and animal production systems, and processing and associated machines and facilities; applications of techniques for data collection and analysis to problems in biological and agricultural engineering; design of experiments and communication of experimental results.

Prerequisites
MEEN 221 or registration therein.

Text
Required:
Introduction to Agricultural Engineering Technology – A Problem Solving Approach. Harry L. Field and John B. Solie. Third Edition. Springer

Course Objectives
The objective of this course is to educate students in fundamental scientific and engineering aspects of agricultural production and environmental systems. The course will include issues related to (1) soil, water, air, and environment and (2) plant and animal production and processing and associated machines and facilities. The course will introduce biological and agricultural engineering students to field and laboratory techniques in engineering through hands-on investigation of natural processes. A strong emphasis will be placed on data analysis and interpretation and preparation of technical reports. The course is divided into sections addressing topics and skills relevant to various areas of specialization in biological and agricultural engineering. At the completion of this course, students should have gained skills necessary to help them succeed in upper-level biological and agricultural engineering courses and should be familiar with various areas of specialization within the biological and agricultural engineering profession.

Learning Outcomes

At the end of this course, students should be able to

1. have a working knowledge of agricultural production techniques;
2. understand how engineering is utilized in agricultural production and environmental systems;
3. have a working knowledge of soil properties;
4. have a working knowledge of agricultural power and machinery;
5. have a working knowledge of the interrelationships among soil, water, air, and agricultural systems;
6. develop hypotheses for scientific experiments;
7. apply engineering principles to design systems for testing hypotheses;
8. develop procedures for testing hypotheses;
9. apply project management techniques to construction of experimental systems;
10. collect experimental data;
11. conduct basic analysis and interpretation of experimental data; and
12. write technical reports detailing results and conclusions of experiments.

Course Requirements and Grading

An Aggie does not lie, cheat or steal, or tolerate those who do.

http://aggiehonor.tamu.edu

Written reports on laboratory activities will be required. Reports should be single-spaced and printed on one side of paper only. Formats will be described in class. A take-home final exam will be given.

Grades for this course are based on ability to master specific skills, participation in individual and team projects, and learning fundamental principles required in engineering design and analysis. The different activities will be weighted as follows in determining semester grades:

Item	Percentage of Grade
Laboratory Reports	35
Homework Assignments	20
Mid-term exam	20
Attendance/participation	05
Final Exam	20
Total	**100**

Any grade disputes should be resolved within one week of grade issuance. It is the students' responsibility to review grades in E-learning on a weekly basis.

Attendance and Late Work Policy

Because most activities will be team activities, class participation is essential. For each unexcused lecture absence, 1 point will be deducted up to a total of 5 points. For each unexcused laboratory absence 5 points will be deducted from your overall total. If you need an excused absence (for non-emergency matters), please email the details to me prior to the absence.

For more information, refer to Student Rule 7 at http://student-rules.tamu.edu/rule07

Final course grades will be assigned as follows:

A	90 - 100 % outstanding competence in the skills taught in the course and exceptional understanding of the applicability and limits of those skills
B	80 - 89 % competence in the skills taught in the course, and good understanding of the applicability and limits of those skills
C	70 - 79 % competence in most skills taught in the course and understanding of the applicability and limits of those skills
D	60 - 69 % minimal competence in some skills taught in the course and limited understanding of the applicability and limits of those skills
F	< 60 %

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu.

Safety during Laboratory Sessions:

It is of utmost importance that all students adhere to all established safety protocols to avoid any physical and/or chemical hazards during laboratory sessions. You are required to read, understand and implement the safety precautions indicated in your laboratory manual, laboratory handouts and/or safety handouts.

Course Topics

Sessions		*L*	*Lectures*	*Laboratories*	*Homework*
1	Jan-14	1	Introduction: Working with Spreadsheets / Basic statistical operations	**Laboratory 1:** • Chemical lab safety training • Sign the Laboratory Safety Acknowledgement (LSA) Forms • Sign the Electronic LSA Forms	
2	Jan-16	2	Report Writing / Creating and Testing Hypotheses		Homework 1
3	Jan-21	3	Unit cancellation / Common units of measure	**Laboratory 2:** Data Analysis – Part 1	
4	Jan-23	4	Power Transmission – Simple Machines		
5	Jan-28	5	Power trains	**Laboratory 3:** Data Analysis – Part 2	Homework 2
6	Jan-30	6	Engines		
7	Feb-04	7	Tractors and Power Units	**Laboratory 4:** Power Transmission	
8	Feb-06	8	Plant Production & Harvesting - Equipment efficiency and capacity		
9	Feb-11	9	Economics of Agricultural Machinery	**Laboratory 5:** Engine Teardown	
10	Feb-13	10	Alternative Energy Systems, Biodiesel		Homework 3
11	Feb-18	11	Exam 1	No Laboratory	
12	Feb-20	12	Ethanol Production		
13	Feb-25	13	Hydrogen/Fuel Cells	**Laboratory 6:** Agricultural Machinery Selection	
14	Feb-27	14	Hydrogen/Fuel Cells/Exam Dis.		
15	Mar-04	15	Handling Storage and Transport of Biological Products	**Laboratory 7:** Economics of Agricultural Machinery	
16	Mar-06	16	Heat flow, Insulation and Psychometrics		

Sessions			*Lecture*	*Lab*	*Homework*
17	Mar-18	17	Ventilation and Air-conditioning	**Laboratory 8:** Biodiesel Production	
18	Mar-20	18	Principles of Nanotechnology		
19	Mar-25	19	Principles of Nanotechnology	**Laboratory 9:** Psychrometrics	Homework 4
20	Mar-27	20	Soils and Soil Properties		
21	Apr-01	21	Precipitation	**Laboratory 10:** Direct Methanol Fuel Cells	
22	Apr-03	22	Erosion and Erosion Control Practices		
23	Apr-08	23	Ground water movement	**Laboratory 11:** Saturated Hydraulic Conductivity	
24	Apr-10	24	Water Quantity & Quality – Infiltration and Runoff		
25	Apr - 15	25	Water Quantity & Quality – Open Channels	**Laboratory 12:** Ground Water Monitoring	
26	Apr-17	26	Irrigation		
27	Apr-22	27	Case Study		
28	Apr-24		Exam 2		

Texas A&M University
Departmental Request for a Change in Course
Undergraduate ♦ Graduate ♦ Professional

• Submit original form and attachments •

Form Instructions

1. Course request type: ☑ Undergraduate ☐ Graduate ☐ First Professional *(DDS, MD, JD, PharmD, DVM)*
2. Request submitted by *(Department or Program Name)*: Department of Biological and Agricultural Engineering
3. Course prefix, number and complete title of course: BAEN 302 Biological and Agricultural Engineering Fundamentals II

Attach a brief supporting statement for changes made to items 4a thru 4d, and 10 below.

4. Change requested
   a. Prerequisite(s): From: ______ To: ______
   b. Withdrawal (reason): ______
   c. Cross-list with: ______

   Cross-listed courses require the signature of both department heads.

   d. Change in course title and description. Enter complete current course title and current course description in item 9; enter proposed course title and proposed course description in item 10. Complete item 11a and b for a change in title.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 11a and b. **Attach a course syllabus.**
5. Is this an existing core curriculum course? ☐ Yes ☐ No
6. If grade type is changing for existing course, indicate the new grade type: ☐ Grade ☐ S/U ☐ P/F (CLMD)
7. If this course will be stacked, please indicate the course number of the stacked course: ______
8. ☐ I verify that I have reviewed the FAQ for *Export Control Basics for Distance Education* (http://vpr.tamu.edu/resources/export-controls/export-controls-basics-for-distance-education).
9. Complete current course title and current catalog course description:

10. Complete proposed course title and proposed catalog course description (not to exceed 50 words):

11. a. As currently in course inventory:

Prefix	Course #	Title (excluding punctuation)
BAEN	302	BIO & AG ENGR FUND II

Lect.	Lab	Other	SCH	CIP and Fund Code	Admin. Unit	FICE Code	Level
3.00	3.00		4.00	1403010006	0433	0 0 3 6 3 2	3

b. Change to:

Prefix	Course #	Title (excluding punctuation)
BAEN	302	BIO & AG ENGR FUND II

Lect.	Lab	Other	SCH	CIP and Fund Code	Admin. Unit	Acad. Year	FICE Code
2.00	3.00		3.00	1403010006	0433	15 - 16	0 0 3 6 3 2

Level: 3

Approval recommended by:

Stephen W. Searcy Patricia Smith for Stephen W. Searcy 10-28-14
Department Head or Program Chair *(Type Name & Sign)* Date

Bob Knight
Chair, College Review Committee Date

Department Head or Program Chair *(Type Name & Sign)* Date
(if cross-listed course)

Kim Dooley
Dean of College Date

Submitted to Coordinating Board by:

Chair, GC or UCC Date

Associate Director, Curricular Services

Date

Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.
Curricular Services – 08/14

TEXAS A&M UNIVERSITY

SYLLABUS

Course number and title	BAEN 302 Biological and Agricultural Engineering Fundamentals II
Term	Fall 2014
Meeting times and location	Lecture: 11:10 AM - 12:00 PM (TR); SCTS 317 Lab (*section 501*): 2:20 - 5:10 PM (T); SCTS 237 Lab (*section 502*): 2:20 - 5:10 PM (R); SCTS 237

Course Description

Fundamentals of microbiology and biochemistry as they apply to biological and agricultural engineering processes to produce useful products and or benign endpoints; topics include microbiology, chemistry of biomolecules, microbial metabolism, bioenergetics, kinetics, bioreactor design, bioprocesses, and downstream processing.

Prerequisites: BIOL 113 ; CHEM 222 or registration therein.

Learning Outcomes

At the end of the course, the students should be able to:

1. ***describe*** cells
2. ***explain*** cellular functions
3. ***develop*** material and energy balances
4. ***interpret*** biochemical reaction kinetics
5. ***compare and contrast*** biochemical processes

Instructor Information

Name	Dr. R. Karthikeyan ("Dr. K")
Telephone number	979.845.7951
Email address	karthi@tamu.edu
Office hours	Email for an appointment
Office location	311 Scoates Hall
TA name	Ms. Cherish Vance
Office location	233A Scoates Hall
Office hours	MW 12:30 - 2:30 PM
Email address	cvance@neo.tamu.edu

Textbook

Doran, P.M. Bioprocess Engineering Principles (1st *or* 2nd edition). Academic Press, (Chapters covered: 1st Edition - 1, 2, 3, 4, 5, 11, and appendix; 2nd Edition - 1, 2, 3, 4, 5, 12, and appendix). *This textbook is highly recommended for this class.* You will find a copy in Evans library course reserves.

All other course relevant materials (slides, lab data, and grades) will be posted at http://ecampus.tamu.edu/. Final grades will be posted on or before 12/18/2014.

Grading

1. Quizzes: There will be three unannounced quizzes (3 x 5 = 15 points).
2. Problem Sets: There will be three problem sets (3 x 5 = 15 points)
3. Exams: There will be four in-class exams (4 x 10 = 40 points)
4. Lab Reports: There will be three individual lab reports (3 x 10 = 30 points).

Final Grade (*100 points maximum*); A: 90-100; B: 80-89; C: 70-79; D: 60-69; and F: <60.

Attendance

Class participation is highly recommended. For every unexcused lab absence, 2 points will be subtracted up to 10 points total from the final grade. (Example: if your final grade is 90 and you were absent for 2 lab unexcused, your final grade will be: 90 - (2 x 2) = 86. You will get a B instead of A!). Please refer to *http://student-rules.tamu.edu* to learn about university excused absences.

No lab reports will be graded or make-up quizzes or exams given unless the student has met the excuses absence requirements outlined in Student Rules (*http://student-rules.tamu.edu*). Your attention and interaction in class is important to my concentration and that of your classmates. *As a courtesy, please turn off your mobile phone audible ringers.*

Academic Honesty & University Regulations

Aggies do not lie, cheat or steal nor do they tolerate those who do.

The Aggie Code of Honor states that the students at Texas A&M University should value honesty and personal integrity. Therefore, it is the responsibility of students and faculty members to help maintain scholastic integrity at the University by refusing to participate in or tolerate scholastic dishonesty.

In this course, it is permissible to discuss lab reports. It is NOT permissible to copy lab reports from another student. It is NOT permissible to discuss any aspect of any exam/quiz until ALL students have completed the exam/quiz. The penalties for violating this policy will range from a ZERO on the quiz or exam or lab report to an F in the course. In addition, a report will be made to the TAMU Honor Council Office. If you have any questions about the Aggie Honor Code, please consult the website: http://www.tamu.edu/aggiehonor/. Please get familiar with university regulations and student rules (http://student-rules.tamu.edu/); all relevant rules will be enforced in this class.

Additional Accommodations

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu.

University Regulations

Please get familiar with university regulations and student rules (http://student-rules.tamu.edu/); all relevant rules will be enforced in this class.

Tentative Lecture Schedule:

Week #	Class #	Date	Topic	Reading (*Text book chapters*)
1	1	09/02/2014	Introduction to bioprocessing	1
	2	09/04/2014	Biology basics	slides
2	3	09/09/2014		
	4	09/11/2014		
3	5	09/16/2014		
	6	09/18/2014	Exam 1 review	
4	7	09/23/2014	**Exam 1**	
	8	09/25/2014	Engineering calculations	2
5	9	09/30/2014	Analysis of data	3
	10	10/02/2014	Material balance	4
6	11	10/07/2014		
	12	10/09/2014		
7	13	10/14/2014		
	14	10/16/2014	Exam 2 review	
8	15	10/21/2014	**Exam 2**	
	16	10/23/2014	Energy balance	5
9	17	10/28/2014		
	18	10/30/2014		
10	19	11/04/2014		
	20	11/06/2014	Exam 3 review	
11	21	11/11/2014	**Exam 3**	
	22	11/13/2014	Homogeneous reactions (Kinetics)	11 (1st) *or* 12 (2nd)
12	23	11/18/2014		
	24	11/20/2014		
13	25	11/25/2014	Thanksgiving Break	
	26	11/27/2014	Thanksgiving Break	
14	27	12/02/2014	Exam 4 review (course evaluation)	
	28	12/04/2014	**Exam 4**	

Tentative Lab Schedule:

Week #	Date	Tuesday Lab (section 501)	Thursday Lab (section 502)
1	09/02/2014	Lab safety	
	09/04/2014		Lab safety
2	09/09/2014	Microbiology protocols	
	09/11/2014		Microbiology protocols
3	09/16/2014	Aseptic techniques	
	09/18/2014		Aseptic techniques
4	09/23/2014	Serial dilution	
	09/25/2014		Serial dilution
5	09/30/2014	Spectrophotometer	
	10/02/2014		Spectrophotometer
6	10/07/2014	Growth curves	
	10/09/2014		Growth curves
7	10/14/2014	Bioseparations	
	10/16/2014		Bioseparations
8	10/21/2014	Bioprocessing	
	10/23/2014		Bioprocessing
9	10/28/2014	Project	
	10/30/2014		Project
10	11/04/2014	Project	
	11/06/2014		Project
11	11/11/2014	Project	
	11/13/2014		Project
12	11/18/2014	Project	
	11/20/2014		Project
13	11/25/2014	Project	
	11/27/2014		Project
14	12/02/2014	Presentations	
	12/04/2014		Presentations

Texas A&M University
Departmental Request for a New Course
Undergraduate ♦ Graduate ♦ Professional

• Submit original form and attach a course syllabus.•

Form Instructions

1. Course request type: ☑ Undergraduate ☐ Graduate ☐ First Professional *(DDS, MD, JD, PharmD, DVM)*
2. Request submitted by *(Department or Program Name)*: Department of Biological and Agricultural Engineering
3. Course prefix, number and complete title of course: BAEN 201: Analysis of Biological and Agricultural Engineering Problems

4. Catalog course description (not to exceed 50 words):
Overview of Biological and Agricultural Engineering discipline through case studies and contemporary problems; introduction to computer programming; engineering analysis and problem solving using computer programming

5. Prerequisite(s): ENGR 111; MATH 151; CHEM 107 and 117 or PHYS 218 or BIOL 113

Cross-listed with: ______ Stacked with: ______

Cross-listed courses require the signature of both department heads.

6. Is this a variable credit course? ☐ Yes ☑ No If yes, from ____ to ____
7. Is this a repeatable course? ☐ Yes ☑ No If yes, this course may be taken ____ times.

Will this course be repeated within the same semester? ☐ Yes ☑ No

8. Will this course be submitted to the Core Curriculum Council? ☐ Yes ☑ No
9. How will this course be graded: ☑ Grade ☐ S/U ☐ P/F (CLMD)
10. This course will be:
    a. required for students enrolled in the following degree programs(s) *(e.g., B.A. in history)*
    B.S. in Biological and Agricultural Engineering
    b. an elective for students enrolled in the following degree program(s) *(e.g., M.S., Ph.D. in geography)*
11. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. **Attach approval letters.**
12. ☑ I verify that I have reviewed the FAQ for *Export Control Basics for Distance Education* (http://vpr.tamu.edu/resources/export-controls/export-controls-basics-for-distance-education).
13.

Prefix	Course #	Title (excluding punctuation)
BAEN	201	Analysis of BAEN Problems

Lect.	Lab	Other	SCH	CIP and Fund Code	Admin. Unit	Acad. Year	FICE Code
2.00	3.00	3.00	3.00	1403010006	0433	15 - 16	0 0 3 6 3 2

Level 2

Approval recommended by:

Stephen W. Searcy Patricia Smith for Stephen W. Searcy 10·28·14
Department Head or Program Chair *(Type Name & Sign)* Date

Bob Knight
Chair, College Review Committee Date

Department Head or Program Chair *(Type Name & Sign)* Date
(if cross-listed course)

Kim Dooley
Dean of College Date

Submitted to Coordinating Board by:

Chair, GC or UCC Date

Associate Director, Curricular Services

Date Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.
Curricular Services – 07/14

TEXAS A&M UNIVERSITY
Department of Biological and Agricultural Engineering
BAEN 201 Analysis of Biological and Agricultural Engineering Problems

DESCRIPTION

Overview of Biological and Agricultural Engineering discipline through case studies and contemporary problems; introduction to computer programming; engineering analysis and problem solving using computer programming.

PREREQUISITES

ENGR 111; MATH 151; CHEM 107 and 117 or PHYS 218 or BIOL 113

INSTRUCTOR

Dr. Patricia Smith
Office: 133 Scoates Hall
Phone: (979) 845-3630
Email: patti-smith@tamu.edu
Office Hours: MW 1:30 to 3:00 or email for appointment

MEETING TIMES AND LOCATIONS

Lecture:	M 12:40-1:30 PM SCTS 317
Lab:	Wednesday, 12:40-2:30 PM Friday, 12:40-2:30 PM SCTS 214

TEXTS

No text is required for this class. Reading materials, lecture notes and open source texts will be available through *eCampus*.

GRADING

Grades will be determined as follows:

Programming assignments	20%
BAEN case studies	30 %
Midterm exam	20 %
Team project	30%

A 10 point grading scale will be used: 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, <60 = F

LEARNING OUTCOMES

At the end of this course students should be able to:

- Develop a broad understanding of the Biological and Agricultural Engineering discipline
- Learn programming fundamentals.
- Write simple programs to solve contemporary Biological and Agricultural Engineering problems.
- Ability to analyze problem solutions.
- Ability to function on teams.

ABET OUTCOMES

- Ability to apply the knowledge of mathematics, science and engineering
- Ability to identify, formulate and solve Biological and Agricultural Engineering problems.
- Ability to function in multidisciplinary teams
- Ability to use modern tools, techniques and computational skills necessary for Biological and Agricultural Engineering Practice.

ATTENDANCE AND MAKE-UP POLICIES

The University Student Rule regarding attendance can be found at http://student-rules.tamu.edu/rule07. This rule outlines what the University and I consider to be excused and unexcused absences. While no part of your grade is directly associated with attendance, student participation in class and team activities is an essential part of this class, especially since much of the assigned work is done in teams.

Late will be reviewed but will receive a grade of zero. If, at any time, extenuating circumstances interfere with your ability to meet class requirements, you are encouraged to contact Dr. Smith prior to the passage of a due date. The ability to make up missed work and the terms of any allowed make-up will be determined on a case-by-case basis.

ADA STATEMENT

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu.

ACADEMIC INTEGRITY

For many years, Aggies have followed a Code of Honor in an effort to unify the aims of all Aggies toward a high code of ethics and dignity. It functions as a symbol to all Aggies, promoting understanding and loyalty to truth and confidence in each other. Students should refer to the University policy on academic integrity found in the **Honor Council website:** http://aggiehonor.tamu.edu. All violations will be handled as specified by University Guidelines.

Aggies do not lie, cheat or steal, or tolerate those who do.

Schedule

Week #	Lecture topic	Lab
1	Course introduction	Computer lab set up
2	Introduction to programming	Programming environment set up
3	Flow charts	Programming structure
4	Algorithms and engineering analysis	Simple coding/programming
5	Writing simple programs	Executing simple programs
6	Spatial programming applications	Introduction to spatial programming
7	Soil and Water Resources Engineering: Case studies	Programming to solve case studies/problems in soil and water resources engineering
8	Air Quality Engineering: Case Studies	Programming to solve case studies/problems in air quality engineering
9	Machine Systems Engineering: Case Studies	Programming to solve case studies/problems in machine systems engineering
10	Agricultural Process Engineering: Case Studies	Programming to solve case studies/problems in agricultural process engineering
11	Food Engineering: Case Studies	Programming to solve case studies/problems in food engineering
12	Bioenergy Engineering: Case Studies	Programming to solve case studies/problems in bioenergy engineering
13	Bioprocess Engineering: Case Studies	Programming to solve case studies/problems in bioprocess engineering
14	Introduction of Team Projects	Project Team programming
15	Finals	Final presentations