

# Cover Sheet: Request 10486

4XXX

## Info

Process	Course New Ugrad/Pro
Status	Pending
Submitter	Leary,James Daniel drleary@ufl.edu
Created	10/12/2015 4:20:22 PM
Updated	1/21/2016 10:39:51 AM
Description	This course is to provide the knowledge for the production of fuels, chemicals and materials from renewable resources. The course includes the fundamental principles and practical applications of bio-based products: biorefinery and biobased products overview, fundamental concepts in understanding biorefinery and biobased products; materials, chemical platforms, and fuels from biomass.

## Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Agricultural and Biological Engineering	Haman, Dorota Zofia		10/19/2015
Added ABE 4XXX Bio-Based Products Syllabus.pdf					10/12/2015
College	Approved	ENG - College of Engineering	Caple, Elizabeth		1/21/2016
Added ABE 6XXX Adv Bio-Based Products Syllabus.pdf					12/14/2015
Deleted Bio-Based Products courses differnces.docx					12/16/2015
Added Bio-Based Products course differences.docx					12/16/2015
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			1/21/2016
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

# Course|New for request 10486

## Info

**Request:** 4XXX

**Submitter:** Leary,James Daniel drleary@ufl.edu

**Created:** 10/12/2015 4:20:23 PM

**Form version:** 1

## Responses

**Recommended Prefix:** ABE

**Course Level :** 4

**Number :** XXX

**Lab Code :** C

**Course Title:** Bio-Based Products from Renewable Resources

**Transcript Title:** Bio-Based Products

**Effective Term :** Earliest Available

**Effective Year:** Earliest Available

**Rotating Topic?:** No

**Amount of Credit:** 3

**Repeatable Credit?:** No

**S/U Only?:** No

**Contact Type :** Regularly Scheduled

**Degree Type:** Baccalaureate

**Weekly Contact Hours :** 3

**Category of Instruction :** Joint (Ugrad/Grad)

**Delivery Method(s):** On-Campus

**Course Description :** This course is to provide the knowledge for the production of fuels, chemicals and materials from renewable resources. The course includes the fundamental principles and practical applications of bio-based products: biorefinery and biobased products overview, fundamental concepts in understanding biorefinery and biobased products; materials, chemical platforms, and fuels from biomass.

**Prerequisites :** CHM 2045 or CHM 2095 and CHM 2046 or CHM 2096 or equivalent general chemistry courses, or instructor permission.

**Co-requisites :** None

**Rationale and Placement in Curriculum :** This course was developed to offer additional (and well-needed) elective credit for Biological Engineers primarily, and will be used as either a departmental elective or an engineering elective. Its placement in the curriculum as an elective makes it attractive for junior and senior Biological Engineering students. It will also serve as elective credit for other engineering majors as well as science-based majors.

**Course Objectives :** This course is to provide students an overview of status quo and future direction of the engineering bioproducts from renewable resources. Topics are selected to cover the fundamental understanding, conversion technologies, and practical applications from renewable biomass to energy, fuel, materials, and chemicals. The students should gain knowledge about fundamental principles of bioproducts from renewable resources and also gain basic skills to further work in such areas as biorefinery and bioproducts.

**Course Textbook(s) and/or Other Assigned Reading:** No textbook. References: Biorefineries-Industrial Processes and Products, Birgit Kamm, Patrick R. Gruber, Michael Kamm, 2006, and Sustainable Production of Fuels, Chemicals and Fibers from Forest Biomass, Junyong (J.Y. ) Zhu, Xiao Zhang, and Xuejun (Jun) Pan, 2011.

**Weekly Schedule of Topics :** Course Outline:

Week

Biorefinery and biobased products overview

1

Biomass properties, characterization and chemistry 2

Fundamental principles - biomass conversion processes 3

Energy fuels from biomass

4-8

Spring Break

9

Chemicals from biomass

10

Midterm Exam

11

Materials from Biomass

11-14

Class project presentation

15

Reading week

16

Final Exam

17

**Grading Scheme :** Attendance 5%

Homework 25%

Term Presentation 10%

Lab Reports 10%

Midterm Exam 25%

Final Exam 25%

Grading Scale:

A 90-100%

B 81-89%

C 70-79%

D 60-69%

E < 60%

**Instructor(s) :** Zhaohui Tong

## ABE 4XXXC: BIO-BASED PRODUCTS FROM RENEWABLE RESOURCES

- 1. Catalog Description:** 3 credits. This course is to provide the knowledge for the production of fuels, chemicals and materials from renewable resources. The course includes the fundamental principles and practical applications of bio-based products: biorefinery and biobased products overview, fundamental concepts in understanding biorefinery and biobased products; materials, chemical platforms, and fuels from biomass.
- 2. Pre-requisites and Co-requisites:** CHM 2045 or CHM 2095 and CHM 2046 or CHM 2096, or equivalent, or with instructor permission. There are no co-requisites.
- 3. Course Objectives:** This course is to provide students an overview of status quo and future direction of the engineering bioproducts from renewable resources. Topics are selected to cover the fundamental understanding, conversion technologies, and practical applications from renewable biomass to energy, fuel, materials, and chemicals. The students should gain knowledge about fundamental principles of bioproducts from renewable resources and also gain basic skills to further work in such areas as biorefinery and bioproducts.

**4. Relationship of course to ABET program outcomes:** This course addresses ABET Program outcomes (a), (d), (g), (h), (j) and (k).

- (a) Apply knowledge of mathematics, science, and engineering*
- (b) Design and conduct experiments, as well as analyze and interpret data*
- (c) Design a system, component, or process to meet desired needs*
- (d) Function on multi-disciplinary teams*
- (e) Identify, formulate, and solve engineering problems*
- (f) Understand professional and ethical responsibilities*
- (g) Communicate effectively*
- (h) Understand the impact of engineering solutions in a global and societal context*
- (i) Recognize the need for, and engage in life long learning*
- (j) Understand contemporary engineering issues*
- (k) Use the techniques, skills, and modern engineering tools necessary for engineering practice*

**5. Instructor:** Zhaohui Tong

- Office location: 103 Rogers Hall
- Telephone: 352-392-1864 x 103
- E-mail address: ztong@ufl.edu
- Web site:
- Office hours: by appointment (8AM-5PM, M-F)

**6. Teaching Assistant:** None

**7. Meeting Times:** 10:40am-11:30am (T) and 10:40am-12:35pm (R)

**8. Class/Laboratory Schedule:** None

**9. Meeting Location:** 106 Rogers Hall

**10. Material and Supply Fees:** none

**11. Textbooks Required:** No textbook required

**12. Reference books:**

Title: Biorefineries-Industrial Processes and Products  
Editor(s): Birgit Kamm, Patrick R. Gruber, Michael Kamm  
Publication date: 2006  
Edition: First edition  
ISBN: 3-527-31194-7  
Publisher(s): Wiley-VCH Verlag GmbH & Co. KGaA

Title: Sustainable Production of Fuels, Chemicals and Fibers from Forest Biomass  
Editors(s): Junyong (J.Y. ) Zhu, Xiao Zhang, and Xuejun (Jun) Pan  
Publication date: 2011  
Edition: First edition  
ISBN: 978-0-8412-2643-2  
Publisher(s): American Chemical Society

**13. Course Outline (tentative):**

	<b>Week</b>
Biorefinery and biobased products overview	1
Biomass properties, characterization, and chemistry	2
Fundamental principles for biomass conversion processes	3
Energy and fuels from biomass	4-8
Spring break	9
Chemicals from biomass	10
Midterm	11
Materials from biomass	11-14
Class project presentation	15
Reading week	16
Final exam	16 or 17

**14. Attendance and Expectations:** Attendance is required. It is vital to class participation and in-class discussion. Absences for which a medical or court excuse is provided (professional letterhead required) will be excused. Any tardiness or early departure from class of 10 minutes will be figured as a half absence. Five absences will result in losing the grading for *Attendance* of 5%. Greater than five absences will result in the next lower letter grade.

**15. Grading:**

**Grading Scale**

A 90-100%      B 80-89%      C 70-79%      D 60-69%      E < 60%

**Grading Method**

**Percentage**

Attendance	5%
Homework	25%
Term Presentation	10%
Lab Reports	10%
Midterm Exam	25%
Final Exam	25%

A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

**16. Exam:** There are two formal exams for this course.

**17. Honesty Policy** – All students admitted to the University of Florida have signed a statement of academic honesty committing them to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

**18. Accommodation for Students with Disabilities** – Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

**19. UF Counseling Services** – Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

**20. Software Use** – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## **ABE 6933C: ADVANCED BIO-BASED PRODUCTS FROM RENEWABLE RESOURCES**

- 1. Catalog Description:** 3 *credits*. This course is to provide the knowledge for the production of fuels, chemicals and materials from renewable resources. The course includes the fundamental principles and practical applications of bio-based products: biorefinery and biobased products overview, fundamental concepts in understanding biorefinery and biobased products; materials, chemical platforms, and fuels from biomass.
- 2. Pre-requisites and Co-requisites:** CHM 2045 or CHM 2095 and CHM 2046 or CHM 2096, or equivalent, or with instructor permission. There are no co-requisites.
- 3. Course Objectives:** This course is to provide students an overview of status quo and future direction of the engineering bioproducts from renewable resources. Topics are selected to cover the fundamental understanding, conversion technologies, and practical applications from renewable biomass to energy, fuel, materials, and chemicals. The students should gain knowledge about fundamental principles of bioproducts from renewable resources and also gain basic skills to further work in such areas as biorefinery and bioproducts.
- 4. Relationship of course to ABET program outcomes:** Not applicable.
- 5. Instructor:** Zhaohui Tong
  - Office location: 103 Rogers Hall
  - Telephone: 352-392-1864 x 103
  - E-mail address: ztong@ufl.edu
  - Web site:
  - Office hours: by appointment (8AM-5PM, M-F)
- 6. Teaching Assistant:** None
- 7. Meeting Times:** 10:40am-11:30am (T) and 10:40am-12:35pm (R)
- 8. Class/Laboratory Schedule:** None
- 9. Meeting Location:** 106 Rogers Hall
- 10. Material and Supply Fees:** none
- 11. Textbooks Required:** No textbook required

### **12. Reference books:**

Title: Biorefineries-Industrial Processes and Products  
Editors: Birgit Kamm, Patrick R. Gruber, Michael Kamm  
Publication date: 2006  
Edition: First edition  
ISBN: 3-527-31194-7  
Publisher(s): Wiley-VCH Verlag GmbH & Co. KGaA

Title: Sustainable Production of Fuels, Chemicals and Fibers from Forest Biomass

Editors(s): Junyong (J.Y. ) Zhu, Xiao Zhang, and Xuejun (Jun) Pan

Publication date: 2011

Edition: First edition

ISBN: 978-0-8412-2643-2

Publisher(s): American Chemical Society

### 13. Course Outline:

	Week
Biorefinery and biobased products overview	1
Biomass properties, characterization and chemistry	2
Fundamental principles for biomass conversion processes	3
Energy and fuels from biomass	4-8
Spring break	9
Chemicals from biomass	10
Midterm	11
Materials from biomass	11-14
Class project presentation	15
Reading week	16
Final exam	17

**14. Attendance and Expectations:** Attendance is required. It is vital to class participation and in-class discussion. Absences for which a medical or court excuse is provided (professional letterhead required) will be excused. Any tardiness or early departure from class of 10 minutes will be figured as a half absence. Five absences will result in losing the grading for *Attendance* of 5%. Greater than five absences will result in the next lower letter grade.

### 15. Grading:

#### Grading Scale

A 90-100%      B 80-89%      C 70-79%      D 60-69%      E < 60%

#### Grading Method

#### Percentage

Attendance	5%
Homework	20%
Course Project	20%
Lab Reports	10%
Midterm Exam	20%
Final Exam	25%

In order to graduate, students must have an overall GPA of 3.0 or better (B grade or better). Both grade and attendance items, as well as general items, are addressed at

<http://gradcatalog.ufl.edu/content.php?catoid=4&navoid=907#attendance> .

**16. Exam:** There are two formal exams for this course.

**17. Honesty Policy** – All students admitted to the University of Florida have signed a statement of academic honesty committing them to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.



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  - SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
  - Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
  - Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.
- 20. Software Use** – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## MEMO

**DATE:** December 16, 2015

**TO:** College of Engineering  
Curriculum Committee Members

**FROM:** James D. Leary, ABE Department

**RE:** Differences in Grad/Undergrad, Dual-Listed Courses

ABE6XXX, *Advanced Bio-Based Products from Renewable Resources* and ABE4XXX, *Bio-Based Products from Renewable Resources* are dual-listed courses. ABE6XXX was approved separately from ABE4XXX, so a review of the requirements between the two was difficult. The differences in the requirements are summarized directly below as taken from each syllabus.

### ABE6XXX

<u>Grading Method</u>	<u>Percentage</u>
Attendance	5%
Homework	20%
Course Project	20%
Lab Reports	10%
Midterm Exam	20%
Final Exam	25%

### ABE4XXX

<u>Grading Method</u>	<u>Percentage</u>
Attendance	5%
Homework	25%
Term Presentation	10%
Lab Reports	10%
Midterm Exam	25%
Final Exam	25%

The primary difference between the two courses is that the graduate course requires a Course Project worth 20% of the grade, while the undergraduate course has a Term Presentation worth 10% of the grade. Other minor differences of 5% are in Homework and the Midterm Exam.