

ABE 4655C/6654C
BIOBASED PRODUCTS FROM RENEWABLE RESOURCES
Fall 2020

Please Note: This course will be taught using a hybrid model of online asynchronous and face-to-face synchronous environments (4655C is 100% online, 6654C is 99% on-line). As such, portions of this course have a face-to-face meeting requirement until university policy deems otherwise. Although encouraged to facilitate hands-on learning objectives, this face-to-face environment is optional. **For those opting to participate in the one-hour, face-to-face synchronous session, the following public health and safety requirements must be followed during this period:**

1. Face coverings are to be supplied by you (the student) and worn throughout the duration of the face-to-face synchronous session, *both indoors and outdoors while on UF property*. If you (the student) forget your face covering, then one may be provided by the instructors if available. If one is not available, then you will be asked to leave. Instructors and teaching assistants will supply their own face coverings and wear them throughout the duration of the face-to-face synchronous session.
2. Social distancing must be observed throughout the duration of the face-to-face synchronous session – this is defined as maintaining a minimum physical distance of 6 feet between yourself (the student), your peers, instructors, and teaching assistants.
3. Upon entering the classroom, lab space, or livestock facility; students, instructors, and teaching assistants will be required to wash their hands for a minimum of 20 seconds. When handwashing stations are not available, hand sanitizer will be used instead. Additionally, hand washing or sanitizing will occur between uses of shared equipment during the lab. Hand sanitizer will be supplied by the instructors, but you (the student) are strongly encouraged to bring your own hand sanitizer for personal use.
4. If you (the student) do not feel well and/or are running a fever or displaying any other symptoms of illness, do NOT come to the face-to-face synchronous session. Instead, you will attend the online synchronous session that will be streamed from the face-to-face session. If you are too ill to attend and participate in the online synchronous session, please notify the instructors for alternative instructional options. Likewise, if an instructor or teaching assistant does not feel well and/or is running a fever or displaying other symptoms of illness, they will not attend the face-to-face synchronous session.

Instructor

Zhaohui Tong

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Office: Frazier Rogers Hall Room 247

Office Hours: by appointment via email,
virtually

****Please Note: Due to COVID-19, fall student consultations will be handled via phone, email or Zoom. If the University's guidelines permit, face to face meetings will be welcomed.***

Textbook or Reference Text (Not Required)

Biomass as a Sustainable Energy Source from the Future: Fundamentals of Conversion Processes

- Editor(s): Wiebren de Jong & J. Ruud van Ommen
- Publication date: 2014
- Edition: First edition
- ISBN: 978-1-118-30491-4
- Publisher(s): John Wiley & Sons, Inc.,

Principles of Polymer Systems

- Editors(s): Ferdinand Rodriguez, Claude Cohen, Christopher K. Ober, and Lynder A. Archer
- Publication date: 1996
- Edition: fifth editions
- ISBN: 1-56032-939-4
- Publisher(s): Taylor & Francis Books. Inc.

Course Description

Credits: 3

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.

Departmental or engineering elective credit (offered Fall) (chemical engineering minor)

Course Pre-Requisites / Co-Requisites

It is recommended that the students have a basic background in general chemistry. The topics of this interdisciplinary course take into consideration that students will be coming to the class from varied backgrounds. Proper background materials will be provided when needed.

Course Objectives

After taking this course, students will be able to:

- Understand an overview of status quo and future direction of the engineering bioproducts from renewable resources.
- Gain knowledge on the fundamental principles for biomass conversion processes.
- Understand practical applications from renewable biomass to energy, fuel, materials, and chemicals.
- Develop teamwork and presentation skills to solve practical problems related to biomass conversion processes

Course Schedule

On-line Class Meeting Time: MWF, period 3, 9:35-10:25am (zoom-in), check Canvas or email for the link and meeting time.

Module 1: Biorefinery and biobased products overview

Module 2: Biomass properties, characterization, and compositions

Module 3: Basic Principles of biomass conversion processing

Module 4: Energy and fuels from renewable resources 1

Module 5: Energy and fuels from renewable resources 2

Module 6: Energy and fuels from renewable resources 3

Module 7: Energy and fuels from renewable resources 3

Module 8: Biobased materials 1

Module 9: Biobased materials 2

Module 10: Biomaterials overview

Module 11: Materials and chemicals from renewable resources 1

Module 12: Materials and chemicals from renewable resources 2

Module 13: Course project

Face-to-face Meeting Time:

Meeting Day and Time	Meeting Periods	Class Number	Primary Location
Friday (Oct. 16 th) 9:35 – 10:35PM	Period 3	ABE4655C/6654C	Rogers Hall 211
Wednesday (Dec. 9 th) 9:35 – 10:35PM	Period 3	ABE4655C/6654C	Rogers Hall 211

**Note: This face-to-face meeting time is required for graduate students who take course 6654C, but not required for students who take course 4655C. The same exam time will be set up in Canvas for who takes the exam online.*

Course Formats:

Option 1: Students in Gainesville area with ability to meet face-to-face

- Complete all pre-readings and assignments on Canvas by scheduled due dates and prior to attending synchronous zoom-in session each week.
- **Attend two one-hour synchronous session face-to-face for mid-term and final exam for graduate students.**
 - When meeting face-to-face, students will be required to wear face coverings according to local and university policy. Students are expected to provide their own face coverings.
 - Students will be required to wash their hands or use hand sanitizer at the start of each lab and between uses of shared equipment. Hand sanitizer will be available for use throughout the lab. Hand sanitizer will be provided by the instructors, but students are encouraged to bring their own hand sanitizer for personal use.
- Complete all post-lab quizzes and assignments on Canvas by scheduled due dates.

Option 2: Students unable to meet face-to-face, regardless of location

- Complete all pre-readings and assignments on Canvas by scheduled due dates and prior to attending synchronous zoom-in session each week.
- **Attend these two one-hour synchronous sessions online during your regularly scheduled period via Zoom. These two one-hour periods will be assigned to you on Canvas by your instructors and you will receive the Zoom link in Canvas or by email.**
 - These two one-hour periods will be streamed live by the instructors from the face-to-face synchronous session.
 - You are expected to participate in the live format with your cameras on. Microphones may be unmuted as needed to participate in class discussions, ask questions, and answer instructor questions. Additionally, the chat feature may be employed to interact with instructors and your peers.
 - Synchronous zoom sessions will be recorded, but only made available to students with absences in line with university attendance policies.
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.
- Complete all post-class quizzes and assignments on Canvas by scheduled due dates.

****Please Note: Due to COVID-19, no transportation to university units will be provided. It is the student's responsibility to provide their own transportation if attending face-to-face synchronous sessions.***

Class attendance will be recorded each week for a student's weekly grade. Attendance will be 5% of your final grade.

- Students logging into Zoom for the live streaming synchronous session will have attendance taken via the Zoom Attendance Report. It is imperative for students attending class via Zoom to ensure they are logged into Zoom and their profile has their first and last name (not another user's name).
- Using notes, reports, or exam materials from previous offering of this course is considered cheating.
- no late exams are accepted except in university excused absences. Late assignments (for projects and homework) start with 5% deduction after the due date/time (usually on Monday) and then this 10% deduction continues until 8:35 for the next class meeting (usually a Wednesday). Then 20% deduction continues until 8:35am on the next class date (usually a Friday), then 30% deduction until 8:35am on the next class date (usually a Monday). No late homework beyond the third missed class (usually one week from the due day) will be accepted unless arranged with the leading instructor.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework of 4 sets	100	20%
Term Presentation	100	15%
Quiz	100	15%
Midterm Exam	100	20%

Final Exam	100	25%
Attendance	100	5%
		100%

Grading Policy

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

***Please Note: THERE ARE NO MAKE-UPS ALLOWED FOR face-to face exams.** Requirements for class attendance and assignments are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Class Final Practicum

An **optional** final practicum will be administered during finals week, **virtually**.

Students must notify the instructors of their desire to take the optional final no later than Monday, December 1, 2020 at 11:59 PM. Students will submit their final for grading via Canvas no later than Thursday, December 17, 2020 at 11:59 PM.

*****A review will be held for those students opting to take the virtual final – date and time TBA**

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students 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.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

Campus Resources:

Health and Wellness

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or

<http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>

TENTATIVE FALL 2020 SCHEDULE

Date	Topic	Location
August 31-September 4	Model 1	Virtually via Zoom
September 7 th	No class -Holiday	Virtually via Zoom
September 9 – 14	Model 2	Virtually via Zoom
September 16 – 21	Model 3	Virtually via Zoom
September 23 – 28	Model 4	Virtually via Zoom
September 30-October 7	Model 5	Virtually via Zoom
October 2-3	No class-Homecoming	Face-to face synchronous session/virtually via Zoom
October 9– 14	Model 6	Virtually via Zoom
October 16	Mid-term Exam	Virtually via Zoom
October 19 – 23	Model 7	Virtually via Zoom
October 26– 30	Model 8	Virtually via Zoom
November 2-6	Model 9	Virtually via Zoom
November 11	NO Class-Holiday	Virtually via Zoom
November 9 – 13	Model 10	Virtually via Zoom
November 16-23	Model 11	Virtually via Zoom
November 25 – 27	NO class – THANKSGIVING	Virtually via Zoom
November 30	Model 12	Virtually via Zoom

December 2– 7	Class presentation/pre-exam review	Virtually via Zoom
<i>December 9</i>	<i>Final exam</i>	Face-to face synchronous session/virtually via zoom
