Cover Sheet: Request 12245

BME4XXX Biomaterials for Drug Delivery

Info

Process	Course|New|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Kristin Theus undergrad@bme.ufl.edu
Created	1/22/2018 11:38:16 AM
Updated	2/16/2018 10:02:26 AM
Description of request	Request to receive an official course number.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Biomedical Engineering 021934001	Daniel Ferris		1/22/2018
No document changes					
College	Approved	ENG - College of Engineering	Heidi Dublin	Approved by HWCOE Curriculum Committee and Faculty Council.	2/16/2018
BME4XXX Biomaterials for Drug Delivery.docx					1/23/2018
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			2/16/2018
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 12245

Info

Request: BME4XXX Biomaterials for Drug Delivery
Description of request: Request to receive an official course number.
Submitter: Kristin Theus undergrad@bme.ufl.edu
Created: 1/23/2018 8:32:08 AM
Form version: 2

Responses

Recommended Prefix BME
Course Level 4
Number XXX
Category of Instruction Advanced
Lab Code None
Course Title Biomaterials for Drug Delivery
Transcript Title BIOMAT FOR DRUG DELIV
Degree Type Baccalaureate

Delivery Method(s) On-Campus
Co-Listing No
Co-Listing Explanation N/A
Effective Term Earliest Available
Effective Year Earliest Available
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3

S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description This course focuses on the principles of engineering controlled release systems, and integrates topics in polymer chemistry, biomaterials, pharmacokinetics/pharmacodynamics, and mass transport phenomena.
Prerequisites BME3060 (C)
Co-requisites BME4632
Rationale and Placement in Curriculum This course has been offered in the past consistently as a special topics course over the past few years (BME4931). We are seeking approval as an official course. Students can complete this course as a specialization track elective (not required for all BME students).
Course Objectives 1. Apply engineering principles to the design of controlled release and drug delivery systems.
2. Understand the biomaterials used in the engineering of drug delivery systems for various applications.
3. Evaluate and critique current literature on drug delivery technologies.

Course Textbook(s) and/or Other Assigned Reading Title: Drug Delivery and Targeting: For Pharmacists and Pharmaceutical Scientists.
Authors: Anya M. Hillery, Andrew W. Lloyd, James Swarbrick
Copyright date:2001
Publisher: Taylor and Francis
ISBN: 9780415271981

Course notes are derived primarily from both the required and recommended textbooks listed. Some course notes are derived from published review articles, and will be provided to students accordingly

Weekly Schedule of Topics Week 1: Course Overview, Introduction to Controlled Drug Delivery (1/9) (Hillery Ch. 1-3)

Week 2: Introduction to Controlled Drug Delivery, Pharmacokinetics/Pharmacodynamics (01/16) (Hillery Ch. 1-3, Saltzman Ch. 7)

Week 3 (1/23) Diffusion in Biological Systems (Saltzman Ch. 2-4, Hillery Ch. 3)

Week 4 (1/30) Polymers in Drug Delivery Systems (Saltzman Ch 9-10, Appendix A2. Hillery Ch 4-5)
HOMEWORK#1 DUE

Week 5 (2/6) Bioresponsive polymers for drug delivery

Week 6 (2/13) Parenteral Drug Delivery Systems (Hillery Ch. 4-5, Saltzman Ch. 9-10)
HOMEWORK#2 DUE

Week 7 (2/20) Oral Drug Delivery (Hillery Ch. 6)

Week 8 (2/27) Transdermal Drug Delivery (Hillery Ch. 8)
MIDTERM EXAM

Week 9 (3/6) SPRING BREAK

Week 10 (3/13) Pulmonary Drug Delivery (Hillery Ch. 10)

Week 11 (3/20) Drug Targeting (Hillery Ch. 5)

Week 12 (3/27) Gene/Nucleic Acid Delivery (Hillery Ch. 14)
HOMEWORK #3 DUE

Week 13 (4/3) Cells as Drugs and Drug Delivery Systems

Week 14 (4/10) *Student Presentations

Week 15 (4/17) *Student Presentations
HOMEWORK #4 DUE

Week 16 (4/24) Exam Review

5/1 FINAL EXAM (12:30-2:30pm)

*Students will present key findings from a literature review on an approved drug delivery topic and in-depth analysis on one paper related to this topic.

Links and Policies https://www.dso.ufl.edu/drc
https://evaluations.ufl.edu/evals
https://evaluations.ufl.edu/results/
https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/
http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html
http://www.counseling.ufl.edu/cwc

http://www.police.ufl.edu/
https://lss.at.ufl.edu/help.shtml
https://www.crc.ufl.edu/
http://cms.uflib.ufl.edu/ask
https://teachingcenter.ufl.edu/
https://writing.ufl.edu/writing-studio/
https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf
http://www.distance.ufl.edu/student-complaint-process

Grading Scheme Percent	Grade	Grade Points
93.0 - 100	A	4.00
90.0 - 92.9	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

Instructor(s) Dr. Blanka Sharma

Biomaterials for Drug Delivery
BME 4XXX Section XXXX
Class Periods: TBA
Location: TBA
Academic Term: Spring 2018

Instructor:
Blanka Sharma
blanka.sharma@bme.ufl.edu
352-273-9329
Office Hours: TBD

Teaching Assistants:
None

Course Description
This course focuses on the principles of engineering controlled release systems, and integrates topics in polymer chemistry, biomaterials, pharmacokinetics/pharmacodynamics, and mass transport phenomena.

Course Pre-Requisites / Co-Requisites
Pre-Requisites: BME3060(C)
Co-Requisites: BME4632

Course Objectives
1. Apply engineering principles to the design of controlled release and drug delivery systems.
2. Understand the biomaterials used in the engineering of drug delivery systems for various applications.
3. Evaluate and critique current literature on drug delivery technologies.

Materials and Supply Fees
None

Professional Component (ABET):
N/A

Relation to Program Outcomes (ABET):

Outcome	**Coverage***
a. Apply knowledge	High
b1. Conduct experiments	
b2. Statistical design of experiments	
c. Design	Low
d. Function on teams	Medium
e. Solve problems	High
f. Professional and ethical responsibility	
g. Communicate	Medium
h1. Economic impact	
h2. Global, societal, and environmental impact	
i. Lifelong learning	High
j. Contemporary issues	High
k. Techniques, skills, and tools for degree program	High

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not part of the course.

Required Textbooks and Software
Title: Drug Delivery and Targeting: For Pharmacists and Pharmaceutical Scientists.
Authors: Anya M. Hillery, Andrew W. Lloyd, James Swarbrick
Copyright date:2001
Publisher: Taylor and Francis
ISBN: 9780415271981

Course notes are derived primarily from both the required and recommended textbooks listed. Some course notes are derived from published review articles, and will be provided to students accordingly.

Recommended Materials
Title: Engineering Principle of Drug Delivery
Author: Mark Saltzman
Copyright Date: 2001
Publisher: Oxford University Press
ISBN: 0-19-508589-2

Course Schedule
**** Note this is subject to change at instructor's discretion***

Week 1: (1/9)	Course Overview, Introduction to Controlled Drug Delivery (Hillery Ch. 1-3)
Week 2: (01/16)	Introduction to Controlled Drug Delivery, Pharmacokinetics/Pharmacodynamics (Hillery Ch. 1-3, Saltzman Ch. 7)
Week 3 (1/23)	Diffusion in Biological Systems (Saltzman Ch. 2-4, Hillery Ch. 3)
Week 4 (1/30)	Polymers in Drug Delivery Systems (Saltzman Ch 9-10, Appendix A2. Hillery Ch 4-5) HOMEWORK#1 DUE
Week 5 (2/6)	Bioresponsive polymers for drug delivery
Week 6 (2/13)	Parenteral Drug Delivery Systems (Hillery Ch. 4-5, Saltzman Ch. 9-10) HOMEWORK#2 DUE
Week 7 (2/20)	Oral Drug Delivery (Hillery Ch. 6)
Week 8 (2/27)	Transdermal Drug Delivery (Hillery Ch. 8) MIDTERM EXAM
Week 9 (3/6)	SPRING BREAK
Week 10 (3/13)	Pulmonary Drug Delivery (Hillery Ch. 10)
Week 11 (3/20)	Drug Targeting (Hillery Ch. 5)

Week 12 (3/27)	Gene/Nucleic Acid Delivery (Hillery Ch. 14) HOMEWORK #3 DUE
Week 13 (4/3)	Cells as Drugs and Drug Delivery Systems
Week 14 (4/10)	*Student Presentations
Week 15 (4/17)	*Student Presentations HOMEWORK #4 DUE
Week 16 (4/24)	Exam Review
5/1	FINAL EXAM (12:30-2:30pm)

*Students will present key findings from a literature review on an approved drug delivery topic and in-depth analysis on one paper related to this topic.

Attendance Policy, Class Expectations, and Make-Up Policy

Excused absences must be consistent with university policies in the graduate catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation.

Students are expected to attend course lectures and participate in class discussions. It is expected that there will be no cell phone or electronic device distractions in class. If you are unable to attend class, will be coming late or leaving early, then you are expected to inform the instructor. Students are expected to be in class, prepared to learn, engaged, and overall contributors to the learning environment. Poor attendance will affect your participation grade.

Unless prior arrangements have been made with the instructor, students will be deducted 15% per day for late coursework, with deductions occurring at the time associated with the due date. Unless prior arrangements have been made with instructor, missed exams will receive a grade of 0pts.

While students are encouraged to discuss course material and assignments together outside of class, it is expected that all coursework/assignments submitted is the students' own work.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework Sets (4)	25 each	15%
Midterm Exam	100 each	20%
Final Exam	100	40%
Term Project	100	15%
Participation	100	10%
		100%

Grading Policy

Percent	Grade	Grade Points
93.0 - 100	A	4.00
90.0 - 92.9	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

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 feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu/evals. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/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://www.dso.ufl.edu/sccr/process/student-conduct-honor-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.

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: http://registrar.ufl.edu/catalog0910/policies/regulationferpa.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 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 suppor*t*, 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.