

 FLORIDA ATLANTIC UNIVERSITY	NEW COURSE PROPOSAL Graduate Programs		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner _____ Catalog _____
	Department Biological Sciences College CESCOS <small>(To obtain a course number, contact erudolph@fau.edu)</small>		
Prefix MCB 6674 Number	<small>(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)</small> Lab Code	Type of Course Lecture	Course Title Advances in Human Microbiome
Credits <small>(Review Provost Memorandum)</small> 3	Grading <small>(Select One Option)</small> Regular Sat/UnSat	Course Description <small>(Syllabus must be attached; see Guidelines)</small> A presentation of the community structure and ecology of the human microbiomes, including oral, skin, and gut. The roles and functional diversity of the gut bacteria as well as the factors that shape the microbiomes of niches are discussed. Concepts in dysbiosis and trends in engineering the human microbiomes are presented	
Effective Date <small>(TERM & YEAR)</small> Summer 2020	Prerequisites None <i>Prerequisites, Corequisites and Registration Controls are enforced for all sections of course.</i>		
Prerequisites None		Academic Service Learning (ASL) course Academic Service Learning statement must be indicated in syllabus and approval attached to this form.	
		Corequisites None	Registration Controls <small>(For example, Major, College, Level)</small> Graduate Level Life Sciences, Biomedical
Minimum qualifications needed to teach course: Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)		List textbook information in syllabus or here	
Faculty Contact/Email/Phone <small>NWADIUTO ESI0BUINESI0BU@FAU-EDU/954-559-3369</small>		List/Attach comments from departments affected by new course College of Medicine/Neuroscience/Psychology, College of Nursing	

Approved by Department Chair <u><i>Sarah L. Natch</i></u> College Curriculum Chair <u><i>Christopher Butler</i></u> 2020.02.10 09:44:51 -05'00' College Dean <u><i>Michelle D. Kalin</i></u> UGPC Chair <u><i>Angela Perantoni</i></u> UGC Chair <u><i>Paul R. DeW</i></u> Graduate College Dean <u><i>Robert W. Johnson</i></u> UFS President _____ Provost _____	Date 2-7-2020 _____ <u>2/10/2020</u> <u>2/26/20</u> <u>2/26/2020</u> <u>3-2-2020</u> _____ _____
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Email this form and syllabus to UGPC@fau.edu 10 days before the UGPC meeting.

Biological Sciences Department
Charles E. Schmidt College of Science
Florida Atlantic University, Boca Raton Campus
Advances in Human Microbiomes Syllabus
Spring 2020

1. **Advances in Human Microbiomes BSC 6936 020 3 credit hours**
CRN# XXXX
Spring 2020: January 9 – May 5, 2020

2. **Course Prerequisites or co-requisites**
Prerequisites: None. General Microbiology or Medical Bacteriology recommended
Instructor Permission: No

3. **Course logistics**
Tuesdays and Thursdays 11:00 am – 12:20 pm
Class location – FAU, Boca Raton Campus, RM ----

4. **Instructor contact information**

Instructor: Nwadiuto Esiobu, Ph.D.
Office address: Sanson Science Bldg, Room 271
Office hours/Tutorials: Tues/Thurs 1:30 – 3:00 pm..
Contact telephone number: Office 561 297-4306
E-mail address: nesiobu@fau.edu (Preferred mode of communication)

5. **Course Description**

Advances in Human Microbiomes is a brand-new graduate level course that explores the rapidly accumulating evidence on the critical role played by microbes in human wellness and disease. This course will provide the tools for understanding the enormous diversity of microbes on our planet - in and on animals in general. Major highlights of the course include factors that shape the human microbiome and how these could be engineered for healthy living. The roles (and molecular basis thereof) of microbes in human brain function, digestion, immunity etc will be presented. The community structure and ecology of the human microbes will be described; including Skin, Oral, and Gut Microbiomes. Causes and remedies for Dysbiosis are presented. The course will present current and future trends of this emerging science. The course is organized into eight modules viz;

- 1) **Bacterial Phylogeny and Concept of Microbiomes**
- 2) **The Human body as an ecological niche**
- 3) **Human Microbiomes – Oral**
- 4) **Human Microbiomes – Skin**
- 5) **Human Microbiomes – Gut**
- 6) **Dysbiosis, Prevention and Therapy**
- 7) **Methods for Studying microbiomes – samples, sequencing and analysis**
- 8) **Applications and Future Trends – Medicine, Industry ETC**

6. **Course objectives / student learning outcomes**

Students who successfully complete this course will be competent in:

1. Discussing the scope and importance of the microorganisms to life on our planet in general
2. Describing the diversity and functional roles (including molecular basis where known) of the human microbiota during health and disease states
3. Basic knowledge of how we study microbiomes
4. Intelligently brainstorming to innovate and apply the microbiome resources for improving lives across the globe.

7. Course topical outline

Week /Date	TOPICS	Assigned Reading
Week 1: 1/14/20	Bacterial Phylogeny and Concept of Microbiomes https://www.youtube.com/channel/UCyz6-taovlaOkPsPtK4KNEg?v=4bAXDcWjYOA https://www.youtube.com/channel/UCyz6taovlaOkPsPtK4KNEg?v=4bAXDcWjYOA https://www.youtube.com/watch?v=g2SiliDaMl8 Assignment: Watch the enclosed video Read / review following articles https://www.nature.com/search?q=microbiome Human Microbiome Research: An Introduction	Designated journal articles and handout
Week 2: 1/21/20	Bacterial Phylogeny and Concept of Microbiomes Bacterial groups and characteristics	Designated journal articles and handout
Week 3: 1/28/20	The Human body as an ecological niche	Designated journal articles and handout
	The Human body as an ecological niche	
Week 4: 2/ 4/20	Human Microbiomes – Oral	Designated journal articles and handout
Week 4: 2/4/20	Human Microbiomes – Oral	Designated journal articles and handout
Week 5: 2/11/20	Human Microbiomes – Skin	Designated journal articles and handout
Week 6: 2/18/20	Human Microbiomes – Skin	Designated journal articles and handout
Week 7: 2/25/20	Methods in Microbiome studies	Designated journal articles and handout
Week 8 3/3/20	Exam 1	
3/10/20	Spring Break	

Week 9: 3/17/20	Human Microbiomes – Gut The human gut anatomy and microbial colonization	
Week 10: 3/24/20	Gut Microbes https://www.youtube.com/watch?v=C9bYKd_Ffgc ... fecal transplant	Designated journal articles and
Week 11: 3/31/20	https://www.youtube.com/watch?v=PJ9BSBHxHDo ... Gut Microbes Term Paper Due	Designated journal articles and handout
Week 12: 4/7/20	https://www.youtube.com/watch?v=c-lWgYFB8VE ...The Microbiome, Mind and Brain	Designated journal
Week 13: 4/14/20	http://www.intjhumnutrfunctmed.org/cme/ICHNFM_Syllabus_2015_Microbiome_Dysbiosis.pdf Human Microbiome and Dysbiosis in Clinical Disease	Designated journal articles and handout
Week 14: 4/21/20	Applications and Trends Engineering gut microbiomes Skin Microbiome applications	Designated journal articles and
Week 15: 4/28/20	Reading Day	Designated journal articles and
Week 16: 5/5/20	Final Exams	

8. Course evaluation method

A. Grade Components/Format

- | | |
|--|------------------|
| 1) Class participation (Flipped class Case discussion) | 20 % Final grade |
| 2) Seven Quizzes | 35 % Final grade |
| 3) Two Exams | 30 % Final grade |
| 4) Research / Term paper | 15 % Final grade |

B. Grading Scale for this course is as follows:

A	=	93 – 100%	C	=	73 – 76.99%
A-	=	90 – 92.99 %	C-	=	70 – 72.99%
B+	=	87 – 89.99%	D+	=	67 – 69.99%
B	=	83 – 86.99%	D	=	63 – 66.99%
B-	=	80 – 82.99%	D-	=	60 – 62.99%
C+	=	77 – 79.99%	F	=	≤ 59.99%

“C” is required to pass this course

9. Policy on makeup tests, late work and incompletes

Please note all the deadlines and due dates in this syllabus. You will not be allowed to make-up assignments and quizzes and exams except in qualifying circumstances as per your student handbook. Also, FAU regulations require me to give all no shows an F grade in the exam. However, with the instructor’s prior approval; a candidate could take a make-up exam with a penalty of 10 points. Incomplete grades are given to students who are PASSING but who could not complete course requirements due to circumstances beyond their control. It is awarded at the sole discretion of instructor.

This syllabus is subject to change. Verbal announcements during class followed by an email sent to the address on record will constitute sufficient notification of such alterations.

10. Suggested non required Text and Readings

□ Prescott's MICROBIOLOGY 2016 10th Edition McGraw Hill Higher Education Publishers.

www.mhhe.com

Instructor's Handbook

11. Classroom etiquette policy regarding electronic devices

University policy on the use of electronic devices states: "In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions." You may use audio-recorders to record the lectures.

12. Disability policy statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of the FAU's campuses -- in Boca Raton, SU 133 (561-297-3880); in Davie, (954-236-1222); and Jupiter, SR 117 (561-799-8585), however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

13. Honor Code policy statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf

14. Religious Accommodations:

Students who wish to be excused from coursework, class activities or examinations must notify the instructor at least three weeks in advance of their intention to participate in religious observation and request an excused absence. The instructor will work with the student to schedule a penalty-free makeup within reasonable limits of time.

Please see www.fau.edu for emergency phone numbers and hurricane advisories.

15. Special course requirements (if applicable) – Not applicable

16. FAU Attendance Policy Statement:

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting.

17. Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who

find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

RESPONSES

Advances in Human Microbiomes

From: Gregg Fields <fieldsg@fau.edu>
Sent: Monday, September 30, 2019 4:51 PM
To: Nwadiuto Esiobu <nesiobu@fau.edu>
Subject: Re: A New Course Proposal for your Review and Comment - MCB 6674 Advances in Human Microbiomes -

Hi Diuto,

I strongly support this course. Very timely, and we have nothing like it at FAU.

I should mention that some of the people that you copied have been replaced in their Chair positions. The current Chairs are: Predrag Cudic (Chemistry & Biochemistry), Janet Robishaw (Biomedical Science), Gary Perry (Complex Systems & Brain Sciences), and Teresa Wilcox (Psychology).

Regards,

Gregg

Gregg B. Fields, Ph.D.
Executive Director, Institute for Human Health & Disease Intervention
Director, Center for Molecular Biology & Biotechnology
Professor, Department of Chemistry & Biochemistry
Florida Atlantic University
5353 Parkside Drive, Building MC17
Jupiter, FL 33458
561-799-8577

From: Teresa Wilcox <wilcox@fau.edu>
Sent: Monday, September 30, 2019 5:05 PM
To: Nwadiuto Esiobu <nesiobu@fau.edu>
Subject: Re: A New Course Proposal for your Review and Comment - MCB 6674 Advances in Human Microbiomes -

I have no objections. Do you need anything else from me?

Teresa Wilcox, Ph.D.
Chair and Professor
Department of Psychology
College of Science
Florida Atlantic University
BS 12, Room 101
777 Glades Road
Boca Raton, FL 33431-0991
wilcox@fau.edu

GRADUATE COLLEGE

FEB 10 2020

From: Marc Kantorow <MKANTORO@health.fau.edu>
Sent: Tuesday, October 1, 2019 12:39 PM
To: Nwadiuto Esiobu <nesiobu@fau.edu>
Cc: Janet Robishaw <jrobishaw@health.fau.edu>
Subject: Re: A New Course Proposal for your Review and Comment - MCB 6674 Advances in Human Microbiomes -

Hi Diuto,

We do not see a conflict with any of the College of Medicine graduate courses.

All the best,

Marc

Marc Kantorow PhD FARVO
Assistant Dean for Graduate Programs
Professor of Biomedical Science
Schmidt College of Medicine
Florida Atlantic University
Boca Raton, FL USA 33431

mkantoro@health.fau.edu 561-297-2910

From: Randy Blakely <rblakely@health.fau.edu>
Sent: Monday, September 30, 2019 5:50 PM
To: Nwadiuto Esiobu <nesiobu@fau.edu>
Subject: Re: A New Course Proposal for your Review and Comment - MCB 6674 Advances in Human Microbiomes -

No problems for me

Randy

Randy D. Blakely, Ph.D.
Executive Director, FAU Brain Institute
Professor of Biomedical Science
Charles E. Schmidt College of Medicine
Florida Atlantic University
Room 109, MC-17, 5353 Parkside Dr.
Jupiter, FL 33458, Tel: 561-799-8100
email: rblakely@health.fau.edu, <http://www.blakelylab.org>

GRADUATE COLLEGE

FEB 10 2020

From: Predrag Cudic <pcudic@fau.edu>
Sent: Tuesday, October 1, 2019 10:33 AM
To: Nwadiuto Esiobu <nesiobu@fau.edu>
Cc: Deguo Du <ddu@fau.edu>
Subject: RE: A New Course Proposal for your Review and Comment - MCB 6674 Advances in Human Microbiomes -

Dear Dr. Esiobu,

This email is to confirm that your proposed new course MCB 6674 Advances in Human Microbiomes does not duplicate any courses currently offered within the graduate program in chemistry.

Best regards,

Predrag Cudic, Ph.D.
Professor and Chair
Department of Chemistry and Biochemistry
Charles E. Schmidt College of Science
Florida Atlantic University

From: Nwadiuto Esiobu
Date: Monday, September 30, 2019 at 5:01 PM
To: Gary Perry, Teresa Wilcox, Janet Robishaw, Predrag Cudic
Subject: A New Course Proposal for your Review and Comment - MCB 6674 Advances in Human Microbiomes -

CC:
The Center for Complex Systems and Brain Sciences - Director Gary Perry
The Psychology Dept - Chair Teresa Wilcox
Biomedical Science (Janet Robishaw)
Dept of Chemistry and Biochemistry – Chair Predrag Cudic

Esteemed and Distinguished Colleagues,

MCB 6674 *Advances in Human Microbiomes*, has been offered twice under the special topics course code (Spring 2017 and Spring 2019) as part of a big course entitled MICROBIOMES, and I would like to have it formerly recorded as a new graduate course.

In order to do so, I am filling out a new graduate course proposal form and under the "Please consult and list departments that might be affected by the new course and attach comments" box, your area has been identified.

GRADUATE COLLEGE

FEB 10 2020

The regulations require me to ask for an email from you stating that your department has no objections to this course.

Please be so kind to send me an email with your comments. Thank you very much for your time.

May I also request that you help to advertise this very timely course to your student population.

I hereby attach the syllabus and new course proposal form.

Warm Regards
Diuto Esiobu

Nwadiuto Esiobu Ph.D.
Professor, Microbiology and Biotechnology
Florida Atlantic University
Jefferson Science Fellow, US Department of State
Contact: Biological Sciences Department
Sanson Life Science Bldg, FAU
777 Glades Rd, Boca Raton, Florida 33431
Phone: 954 559 3369 (Cell)
561 297 4306 (Office)

GRADUATE COLLEGE

FEB 10 2020