

# FLORIDA ATLANTIC UNIVERSITY™

## Undergraduate Programs—COURSE CHANGE REQUEST<sup>1</sup>

UUPC APPROVAL \_\_\_\_\_  
 UFS APPROVAL \_\_\_\_\_  
 SCNS SUBMITTAL \_\_\_\_\_  
 CONFIRMED \_\_\_\_\_  
 BANNER POSTED \_\_\_\_\_  
 CATALOG \_\_\_\_\_

<b>DEPARTMENT: BIOLOGICAL SCIENCE</b>	<b>COLLEGE: COLLEGE OF SCIENCE</b>
<b>COURSE PREFIX AND NUMBER: MCB 2004</b>	<b>CURRENT COURSE TITLE: MICROBIOLOGY FOR HEALTH SERVICES</b>
<b>CHANGE(S) ARE TO BE EFFECTIVE (LIST TERM): FALL 2013</b>	<b>___ TERMINATE COURSE (LIST FINAL ACTIVE TERM):</b>
<b>CHANGE TITLE TO:</b>  <b>CHANGE PREFIX FROM: TO:</b>  <b>CHANGE COURSE NO. FROM: TO:</b>  <b>CHANGE CREDITS<sup>2</sup> FROM: TO:</b>  <b>CHANGE GRADING FROM: TO:</b>  <b>CHANGE WAC/GORDON RULE STATUS<sup>3</sup></b> ADD* _____ REMOVE _____  <b>CHANGE GENERAL EDUCATION REQUIREMENTS<sup>4</sup></b> ADD* _____ REMOVE _____  <small>*WAC and General Education criteria must be clearly indicated in attached syllabus. For WAC Guidelines: <a href="http://www.fau.edu/WAC">www.fau.edu/WAC</a>. Please attach General Education Course Approval Request: <a href="http://www.fau.edu/deanugstudies/GeneralEdCourseApprovalRequests.php">www.fau.edu/deanugstudies/GeneralEdCourseApprovalRequests.php</a></small>	<b>CHANGE DESCRIPTION TO:</b>  <b>CHANGE PREREQUISITES/MINIMUM GRADES TO*:</b>  <u>EXISTING</u> ONE SEMESTER OF BIOLOGY  <u>NEW PRE/REQ.</u> BSC 1010, BSC 1010L or BSC 2085, BSC 2085L or BSC 2086, BSC 2086L  <b>EXISTING COREQUISITES:</b>  <b>CHANGE COREQUISITES TO*:</b>  <b>CHANGE REGISTRATION CONTROLS TO:</b>  <small>*Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).</small>
<b>Attach syllabus for ANY changes to current course information.</b>	
Should the requested change(s) cause this course to overlap any other FAU courses, please list them here.	Please consult and list departments that might be affected by the change(s) and attach comments. <sup>5</sup>

Faculty contact, email and complete phone number:  
 David Binninger; [binninge@fau.edu](mailto:binninge@fau.edu); 561.297-3323

<b>Approved by:</b> Department Chair: <u><i>David Binninger</i></u> College Curriculum Chair: <u><i>J E M</i></u> College Dean: <u><i>D J G</i></u> UUPC Chair: <u><i>J E M</i></u> Undergraduate Studies Dean: <u><i>Emil Schmitt</i></u> UFS President: _____ Provost: _____	<b>Date:</b> Feb. 27, 2013  <u><i>3/21/13</i></u> <u><i>3/28/13</i></u> <u><i>3/22/13</i></u> <u><i>3/27/13</i></u>	<ol style="list-style-type: none"> <li>1. Syllabus must be attached; syllabus checklist recommended; see guidelines and checklist: <a href="http://www.fau.edu/academic/registrar/UUPCinfo">www.fau.edu/academic/registrar/UUPCinfo</a></li> <li>2. Review Provost Memorandum: <b>Definition of a Credit Hour</b> <a href="http://www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf">www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf</a></li> <li>3. WAC approval (attach if necessary)</li> <li>4. Gen. Ed. approval (attach if necessary)</li> <li>5. Consent from affected departments (attach if necessary)</li> </ol>
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Email this form and syllabus to [mianning@fau.edu](mailto:mianning@fau.edu) seven business days before the University Undergraduate Programs Committee meeting so that materials may be viewed on the UUPC website prior to the meeting.

**Microbiology for Health Services (MCB 2004-001 CRN#80367), Credits 3, Syllabus, Fall 2013** (GN 101, T/Th, 12:30-1:50 PM). Prerequisite: BSC 1010, BSC 1010L, or BSC 2085, BSC 2085L, or BSC 2086, BSC 2086L; Corequisite: MCB 2004L This course is specifically designed for nursing/allied health students to learn basic aspects of microbes, their control and their roles in health and disease. ***It isn't intended for College of Science Majors & preprofessional students (e.g. Pre-Medical, Pre-Dental, etc.)!*** This course provides accommodations for students with disabilities via FAU's Office for Students with Disabilities (OSD). Religious accommodations are also provided for students observing religious holidays (see instructor).

I. **Textbook:** The text is *Microbiology: a systems approach*, 3<sup>rd</sup> Ed., by MK Cowan (McGraw-Hill, 2012). There are several versions of the book; you **must** have the 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> Eds.; Connect access is also required (it comes with your textbook or you can buy it at the bookstore or online, see inside text cover). Ten *Microbes in Motion* CD-ROMs are in **Library Course Reserves**; you may check them out for up to **1 hr**.

II. **Class Policies:** Classes are **mandatory**; attendance ***isn't*** taken, but ***you're responsible*** for everything we do or assign PLUS all homework and quizzes. Non-medical electronics ***except iClickers must be turned off before class*** or they'll be **confiscated**. No non-medical electronic items of **any kind** are allowed in exams. **All persons with >1 clicker or with electronics in exams will get a 0- no exceptions!** Any person disrupting class must ***leave!*** **Cheating, incl. plagiarism, . talking during a test/quiz, etc. will result in a zero and any other punishment I choose, including an F and an academic irregularity! Refer to FAU's Academic Code of Conduct on Blackboard University Regulation 4.001. (Bb)!**

III. **Exams:** There are **five (5)** hourly exams PLUS **one (1) noncumulative** Final; all have 33 questions worth 3 pts. (you'll get 1 pt. to fill out Answer forms properly). All test questions are multiple choice; exams and quizzes are curved so the average=75%. **I'll assign you a 4-digit personal identifying number (PIN) to use on all exams!** I'll provide **Answer Forms, #2 pencils & erasers for all exams!** It's ***your responsibility*** to bring a **photo ID for exams!** **You must be silent during exams and quizzes.** ***On exams only***, if you don't understand a question/answer, ***raise your hand*** and I'll explain.

IV. **Quizzes and Homework:** We'll have homework problems worth **50 points** and iClicker quizzes worth **50 points**, so ***you need an iClicker***; if you've already got one, you can use it. iClicker registration info will be given in the 2<sup>nd</sup> week of classes. **It's your responsibility to:** 1) ***always*** bring your ***working*** iClicker; 2) register it **properly**; 3) study material a quiz may cover; 4) be in class as quizzes are given. No quizzes will be held the 1<sup>st</sup> or 2<sup>nd</sup> class days, but ***later*** classes may have a quiz. **If you don't answer >75% of quiz questions, you get no pts on it!** **All quizzes are required!** There are two quiz types: **formative quizzes** assess knowledge & teaching and ***won't count***. Formative quizzes are in script (*Krebs cycle*). **Summative quizzes** will count and are in standard font (glyoxylate). ***I won't drop give make-up quizzes!*** If you've a ***valid reason + documents*** for missing a quiz (see V, 2, below), I'll **deduct one quiz only ( $\leq 10$  pts)** from your

total. All homework is *online, and is given only via Connect's LearnSmart*. Homework will be worth 50 total points. *You must do these or face the consequences!*

V. **Make-up Exams:** If you've got a conflict for a scheduled exam, *it's your obligation (not mine!)* to inform me *at least 1 week (7 days) in advance*. I'll then schedule a make-up exam for you (with a valid reason) at the testing center (210, Student Services Support Building, where the Registrar & Cashier are found). **Remember the following:**

1. Make-up exams are given *at my discretion only!* I allow *14 days after grades are posted* to arrange make-up exams.
2. *Only if you have a valid reason for missing an exam* (i.e. family illness/death, car accident/failure, jury/military duty etc.) will I give make-ups. *Social occasions (weddings, etc.) aren't valid reasons*. I require written verification (e.g. Doctor's note, etc.) *in all cases*. *Don't give documents to me!* Instead, scan/photograph them and send them to the Digital Site I designate.
3. I reserve the right to give any make-up exam at the end of the semester!

VI. **Grading:** FAU Policy forbids me from discussing grades by 'phone or e-mail, so don't ask! From time to time, I may offer extra-credit in various forms. Grades will be posted by your PIN. Your grade will be the % you earn on your *five best Exams* + Quiz + Homework points divided by the course total (600 pts). If you do well on Exams 1-5, you *may* skip the Final. Grading scales are: **A** $\geq$ 92.5%; **A-**=89.5-92.4%; **B+** =86.5-89.4%; **B**=82.5-86.4%; **B-**=79.5-82.4%; **C+**= 76.5-79.4%; **C**=72.5-76.4%; **C-**= 67.5-72.4%; **D+**=64.5-67.4%; **D**=59.5-64.4%; **D-**=58.5-59.4%. All scores 58.4% or less =F. *If you get <50% on any exam, drop the course!* You'll have just 2 weeks after exams are posted and 1 month after the term ends to review grades!

VII. **Office Hours, telephone/e-mail:** My office is 286 Sanson Science, my 'phone is 561-297-4474 and e-mail is [JCARUS11@fau.edu](mailto:JCARUS11@fau.edu). Office hours are 9:30-11:30 AM T & Th or by appointment (only I can set these!). Don't even *think* of *camping outside my door*; if you can't come to office hours, **request an appointment!** **E-mail is the easiest way** to get in touch, *but* send me e-mail *only* from your FAU e-mail! Office hours will end for the semester at 11:30 AM T, 29 November!

VIII. **Class schedule:**

Day	Lecture Topic(s)	Chapt(s).
T, 21 Aug.	Microbial Characteristics, etc.; Biological Chemistry	1-2
Th, 23 Aug.	Macromolecules: their roles in cells	2
T, 28 Aug.	Macromolecules and cells; culturing microbes	2-3
Th, 30 Aug.	Culturing Microbes; Microscopy	3
T, 4 Sept.	Microscopy/Review	3
Th, 6 Sept.	Exam 1, 100 points	1-3

T, 11 Sept.	Bacteria: shape, cell wall, structure	4
Th, 13 Sept.	Bacteria; Eucaryotes	4-5
T, 18 Sept.	Eucaryotes; Viruses- gen. info., culture	5-6
Th, 20 Sept.	Viruses- importance & review	6
<b>T, 25 Sept.</b>	<b>Exam 2, 100 points</b>	<b>4-6</b>
Th, 27 Sept.	Microbial Nutrition, Ecology & Growth	7
T, 2 Oct.	Microb. Growth (cont.) & metabolism	7
Th, 4 Oct.	Microbial Metabolism-cont. & review	8
T, 9 Oct.	<b>Exam 3, 100 points</b>	<b>7-8</b>
Th, 11 Oct.	Microbial Genetics	9
T, 16 Oct.	Microb. Genetics/Genetic Engineering	9-10
Th, 18 Oct.	Genetic Engineering; review	10
<b>T, 23 Oct.</b>	<b>Exam 4, 100 points</b>	<b>9-10</b>
Th, 25 Oct.	Microbial Control	11
T, 30 Oct.	Drugs, microbes & hosts-chemotherapy	12
Th, 1 Nov.	Chemotherapy-continued & review	12
<b>T, 6 Nov.</b>	<b>Exam 5-100 points</b>	<b>11-12</b>
Th, 8 Nov.	Microbe-Human Interactions and Disease/Epidemiology	13
T, 13 Nov.	Nonspecific host defenses	14
Th, 15 Nov.	Specific Immunity	15
T, 20 Nov.	Specific Immunity-cont.; Hypersensitivity	15-16
<b>Th, 22 Nov.</b>	<b>Thanksgiving Holiday- no class!</b>	
T, 27 Nov.	Immune Hypersensitivities ( <b>End of classes/office hrs</b> )	16

**W, 28 Nov.                      Make-up Exam Day- Time/place to be announced**

**Th, 29 Nov.      Final Exam, 100 points, 10:30 AM-noon, GN 101                      13-16**

**Important Dates in the Semester:** T, 21 Aug., *class begins*; F, 24 Aug. (*last day to drop/add courses without fee consequences*); Thursday, 8 September (*Hourly Exam #1*); F, 12 Oct. (*last day students may drop/withdraw without getting a WF*); T, 27 Nov. (*last day of class and office hrs.*); *Final Exam (Th, 29 Nov., 10:30 AM-noon)*; M, 10 Dec., 9:00 AM (*Grades due at Registrar's office*).

**Learning Objectives for Course:** (registering in this class is a *binding agreement* by students to do the following): Students will learn the objectives by always doing these:

- 1) reading the text in advance and coming to class on-time and fully prepared;
- 2) paying attention in class and taking good notes;
- 3) participating fully in group discussions, including making hypotheses and answering questions, even when you're unsure of the answer and then adjusting your answers/hypotheses as necessary, as a result of group discussions and quizzes;
- 4) answering all quiz questions while trying your best to correctly answer them; and
- 5) doing any and all assigned homework problems to the best of your ability.

**To master the material covered in this course it is expected that the student will spend a minimum of two hours per week per credit hour on the out of classroom assignments.**

**NB: if you don't do the above, don't expect good results for your grade!**

**Learning Objectives by Exam; Exam One Learning Objectives:** For Exam 1, students will be able to do the following:

- 1) identify and describe the chemistry of atoms and molecules important to life, including chemical bonds; 2) understand what pH is and how it works; 3) identify different microscopy types, stains, etc., esp. the Gram stain, and be able to discuss them and distinguish between them; 4) identify different bacteria isolation and culture methods; 5) compare and contrast any of the above

**Exam Two Learning Objectives:**

By Exam 2, students should be able to: 1) identify different bacterial structures, inclusions & characteristics, esp. the cell wall, and discuss them; 2) identify different eukaryotic cells, especially microbes and their organelles, functions; 3) know about and be able to describe different viruses and their replication cycles; 4) identify different bacteria nutrient types, how cells acquire them, different media types and bacterial growth characteristics, esp. growth curves & environmental factors affecting growth; 5) compare and contrast any of the above.

**Exam Three Learning Objectives:**

For Exam 3, students will be able to 1) discuss enzyme structure, function & regulation; 2) understand and describe cellular reactions (rxns.) and work; 3) discuss cellular metabolism; 4) discuss important catabolic pathways, including glycolysis, the pentose PO<sub>4</sub> pathway, the TCA (Kreb's) cycle, e<sup>-</sup> transport and fermentations; 5) know about important anabolic pathways; 6) compare and contrast any of the above.

**Exam Four Learning Objectives:**

For exam 4, students will be able to 1) discuss basic molecular biology of cells, focusing on bacteria; 2) discuss the ways DNA replicates & the enzymes/proteins involved, organization of genes, different RNA types and their cell functions; 3) discuss how transcription and translation are carried out in cells; 4) discuss mutations, their detection and genetic recombination types; 5) discuss Genetic Engineering/Biotechnology; 6) compare and contrast any related topics in this section.

**Exam Five Learning Objectives:** For exam 5, students will be able to 1) describe the main physical & chemical methods used to control microbes; 2) discuss the main classes of drugs used to treat microbial infections; 3) compare and contrast any of the above.

**Final Exam Learning Objectives:**

For the Final Exam, students will be able to do the following: 1) discuss microbial interactions, including the 3 different types of symbioses; 2) discuss the different types of blood cells in people and their functions; 3) discuss non-specific and specific immunity, including hypersensitivities; 4) discuss the terminology and definitions and have a basic understanding of epidemiology; 5) compare and contrast any of the above.