

MCB 300: MICROBIOLOGY

COURSE SYLLABUS: FALL 2019

Course Web Site: <http://www.life.illinois.edu/mcb/300>

Instructors:

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M: 4:00 – 5:00pm in B415 CLSL
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Course Coordinator:

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Teaching Assistant

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Office Hour:

Office Hours:

(or by appointment)

Textbook

The textbook for this course is *Brock: Biology of Microorganisms* by Madigan, Martinko, Stahl and Clark, Pearson Education, Inc., 2015 (15th edition). E-book versions (web or downloadable) can be purchased from the publisher (www.mypearsonstore.com) for less than the price of the hardcover version. A copy of the textbook is also on reserve at the Undergraduate Library and the Learning Center (101 Burrill Hall). **Note: Although all material on exams will be covered in lecture, the textbook is *strongly* recommended reading for enhanced understanding of the course material.**

Course Policies:

All students are assumed to have read and understood the “Code of Policies and Regulations Applying to All Students,” University of Illinois, and will be expected to act accordingly. The Code is available online at: <http://www.admin.uiuc.edu/policy/code/index.html>

Disabilities and Religious Observances:

Please contact the course coordinator during the first week of classes to make requests for disability accommodations or observation of religious holidays.

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Date	Lecture	Lecture Topic	Instructor
Mon Aug 26	Intro Lecture	Course Introduction/Careers in Microbiology	Metcalf
Wed Aug 28	Lecture 1 iClicker 1	The Microbial World	Metcalf
Fri Aug 30	Lecture 2 iClicker 2	The "P" Word	Metcalf
		Homework 1 open, due 9/6/19 by 9 AM	
Mon Sept 2	No Class	Labor Day	
Wed Sept 4	Lecture 3 iClicker 3	The "P" Word (cont)	Metcalf
Fri Sept 6	Lecture 4 iClicker 4	On Being Small	Metcalf
Mon Sept 9	Lecture 5 iClicker 5	Microbial Cell Structure	Metcalf
		Homework 2 open, due 9/16/19 by 9 AM	
Wed Sept 11	Lecture 6 iClicker 6	Microbial Cell Structure (cont)	Metcalf
Fri Sept 13	Lecture 7 iClicker 7	Microbial Cell Structure II/Microbial Growth and Replication	Metcalf
Mon Sept 16	Lecture 8 iClicker 8	Microbial Growth and Replication I (cont)	Metcalf
Wed Sept 18	Lecture 9 iClicker 9	Microbial Growth and Replication I (cont)	Metcalf
Fri Sept 20	Lecture 10 iClicker 10	Microbial Physiology I	Metcalf
Mon Sept 23	Exam 1	Covers Lectures 2-10	Metcalf
Wed Sept 25	Lecture 11 iClicker 11	Microbial Physiology I/II	Metcalf

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Date	Lecture	Lecture Topic	Instructor
Fri Sept 27	Lecture 12 iClicker 12	Microbial Physiology II	Metcalf
		Homework 3 open, due 10/7/19 by 9 AM	
Mon Sept 30	Lecture 13 iClicker 13	Photosynthesis I	Metcalf
Wed Oct 2	Lecture 14 iClicker 14	Photosynthesis II	Metcalf
Fri Oct 4	Lecture 15 iClicker 15	Photosynthesis III	Metcalf
Mon Oct 7	Lecture 16 iClicker 16	Life without air/Fermentation	Metcalf
		Homework 4 open, due 10/14/19 by 9 AM	
Wed Oct 9	Lecture 17 iClicker 17	Life without air/Respiration	Metcalf
Fri Oct 11	Lecture 18 iClicker 18	Methanogenesis and Syntrophy	Metcalf
Mon Oct 14	Lecture 19 iClicker 19	Chemolithotrophs	Metcalf
Wed Oct 16	Exam 2	Covers Lectures 11-19	
Fri Oct 18	Lecture 20 iClicker 20	Establishment of microbial communities–I: The Role of Evolution in Establishing Community Structure Drop Deadline	Blanke
Mon Oct 21	Lecture 21 iClicker 21	Establishment of microbial communities–II: Rapid Change through Horizontal Gene Transfer	Blanke
		Homework 5 open, due 10/28/19 by 9 AM	

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Date	Lecture	Lecture Topic	Instructor
Wed Oct 23	Lecture 22 iClicker 22	Who lives in and around us–I: Nature of Microbial Communities, &, Culture Independent Techniques	Blanke
Fri Oct 25	Lecture 23 iClicker 23	Who lives in and around us–II: Exploring the Human Skin and Vaginal Microbiomes.	Blanke
Mon Oct 28	Lecture 24 iClicker 24	Who lives in and around us–III: Navigating the Human Gut Microbiome.	Blanke
Wed Oct 30	Lecture 25 iClicker 25	Pathogenic Microbe-Host Interactions-I: Introduction to Infectious Diseases and Microbial Pathogenesis.	Blanke
		Homework 6 open, due 11/6/19 by 9am	
Fri Nov 1	Lecture 26 iClicker 26	Pathogenic Microbe-Host Interactions-II: Host Barriers to Microbial Interactions.	Blanke
Mon Nov 4	Lecture 27 iClicker 27	Pathogenic Microbe-Host Interactions-III: Host Innate Defenses to Pathogenic Microbes.	Blanke
Wed Nov 6	Lecture 28 iClicker 28	Pathogenic Microbe-Host Interactions-IV: Host Adaptive Defenses to Pathogenic Microbes.	Blanke
Fri Nov 8	Lecture 29 iClicker 29	Pathogenic Microbe-Host Interactions-V: Studying the Virulence of Pathogenic Microbes - Koch's Postulates, Infection Models, & Identifying Virulence Factors.	Blanke
Mon Nov 11	Exam 3	Covers Lectures 20-29	
Wed Nov 13	Lecture 30 iClicker 30	Pathogenic Microbe-Host Interactions-VI: Establishing an Infection within the Host - Immune Evasion and Colonization.	Blanke

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Date	Lecture	Lecture Topic	Instructor
Fri Nov 15	Lecture 31 iClicker 31	Pathogenic Microbe-Host Interactions-VII: Invasion, Intracellular Survival, Dissemination, and Transmission.	Blanke
		Homework 7 open, due 11/22/19 by 9am	
Mon Nov 18	Lecture 32 iClicker 32	Pathogenic Microbe-Host Interactions-VIII: Remodeling the Host into a Suitable Infection Microenvironment – the Amazing World of Bacterial Toxins.	Blanke
Wed Nov 20	Lecture 33 iClicker 33	Pathogenic Microbe-Host Interactions-IX: Fantastic Effectors and Where to Find Them.	Blanke
Fri Nov 22	Lecture 34 iClicker 34	Controlling Bacterial Infections...or are we?: The Life and Death Business of Generating Effective Antimicrobials in the Face of Antimicrobial Resistance.	Blanke
Mon Nov 25	Fall Break	No Class	
Wed Nov 27	Fall Break	No Class	
Fri Nov 29	Fall Break	No Class	
		Homework 8 open, due 12/9/19 by 9am	
Mon Dec 2	Lecture 35 iClicker 35	Going Viral-I: The Amazing Diversity of Viruses; How Form Follows Function.	Blanke
Wed Dec 4	Lecture 36 iClicker 36	Going Viral-II: How Viruses cause Disease.	Blanke
Fri Dec 6	Lecture 37 iClicker 37	Going Viral-III: How Viruses of Microbes Shape Ecosystems.	Blanke
Mon Dec 9	Lecture 38 iClicker 38	Eukaryotic Pathogens: Wayward Fungi, Mycoses, and a Hypothesis.	
Wed Dec 11	Lecture 39 iClicker 39	Vaccines as the Real Game Changer: Next Generation Strategies to Prevent Microbial Diseases in Humans.	Blanke

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Date	Lecture	Lecture Topic	Instructor
Thu Dec 12	Reading Day	No Class	
Wed, Dec 18 1:30pm- 4:30pm	Final Exam	Covers Lectures 30-39	Blanke