



Course Syllabus: Introductory Microbiology - B 103

Division	Biological and Environmental Sciences & Engineering Division
Course Number	B 103
Course Title	Introductory Microbiology
Academic Semester	Spring
Academic Year	2016/2017
Semester Start Date	01/22/2017
Semester End Date	05/18/2017
Class Schedule (Days & Time)	09:30 AM - 11:00 AM Mon Wed

Instructor(s)				
Name	Email	Phone	Office Location	Office Hours
Michael Florian Mette	florian.mette@kaust.edu.sa			Bldg. 2, Room 4327, anytime during working hours;

Teaching Assistant(s)	
Name	Email

Course Information	
Comprehensive Course Description	The course will provide general as well as selected insights on microbiology. Topics covered will be fundamental concepts of microbiology, basic microbial genomics and genetics, the diversity of microbes, and microbial ecology. Upfront-style teaching to classes will be combined with problem-based interactive approaches. Exemplary problems will be discussed to introduce students to essential topics in order to provide the essential basis for the advanced course Fundamentals of Molecular Biology B 211. In addition, a central aim of the class is to help students realize how deductive processes are harnessed in biological research to gain new insight.
Course Description from Program Guide	This course aims at an audience with basic experience in microbiology. It will serve students intending to major in all disciplines in biology as opportunity to refresh existing knowledge as well as to broaden their horizon. The class starts with an overview over microbial cell structure and functions, metabolism and growth control as well as basic microbial genomics and genetics and their relevance for biotechnology. Microbial systematics and metabolic diversity will be introduced and illustrated by selected examples from different microbial taxa. Finally, the pivotal role of microorganisms in large scale ecological processes will be discussed and their interaction with other organisms, including humans, will be covered.
Goals and Objectives	This course aims to provide students with a solid theoretical foundation in basic microbiology in order to prepare them for more advanced classes. It is in particular designed as a follow-up of B 102 Introductory Cell Biology and B 101 Introductory Biochemistry courses.
Required Knowledge	Basic understanding of general science and familiarity with topics covered in courses B 102 Introductory Cell Biology and B 101 Introductory Biochemistry are expected.
Reference Texts	Brock Biology of Microorganisms, Global ed. of 14th revised ed. (2015), ISBN: 978-1-292-01831-7;
Method of evaluation	80.00% - Tests 20.00% - Quiz(zes)
Nature of the assignments	Students will be expected to prepare for the course based on assigned readings. Active preparation of course topics will be checked by ad hoc quizzes (20%), course progress by 3 interim exams and 1 final exam (80%).

Course Policies	Attendance of and active participation in classes is mandatory. Any planned absence needs to be discussed with the course instructor.
Additional Information	

Tentative Course Schedule

(Time, topic/emphasis & resources)

Week	Lectures	Topic
1	Mon 01/23/2017 Wed 01/25/2017	Microbial Cell Morphology and Function (textbook chap. 1 and 2)
2	Mon 01/30/2017 Wed 02/01/2017	Microbial Metabolism (textbook chap. 3)
3	Mon 02/06/2017 Wed 02/08/2017	Microbial Growth and Growth Control (textbook chap. 5)
4	Mon 02/13/2017 Wed 02/15/2017	Repetition and Problem Solving session, Exam Part A
5	Mon 02/20/2017 Wed 02/22/2017	Genomes of <i>Bacteria</i> , <i>Archaea</i> , and Viruses: A Comparison (textbook chap. 6 and 8)
6	Mon 02/27/2017 Wed 03/01/2017	Genetics of <i>Bacteria</i> and <i>Archaea</i> (textbook chap. 10)
7	Mon 03/06/2017 Wed 03/08/2017	Microbial Genetic Engineering and Biotechnology (textbook chap. 11)
8	Mon 03/13/2017 Wed 03/15/2017	Repetition and Problem Solving session, Exam Part B
9	Mon 03/20/2017 Wed 03/22/2017	Microbial Evolution, Systematics, and Metabolic Diversity (textbook chap. 12 and 13)
10	Mon 03/27/2017 Wed 03/29/2017	Example <i>Bacteria</i> , <i>Archaea</i> , and Eukaryotic Microbes (textbook chap. 15, 16, and 17)
11	Mon 04/03/2017 Wed 04/05/2017	Spring Break
12	Mon 04/10/2017 Wed 04/12/2017	Repetition and Problem Solving session, Exam Part C
13	Mon 04/17/2017 Wed 04/19/2017	Microbial Ecology: Concepts and Methodology (textbook chap. 18 and 19)
14	Mon 04/24/2017 Wed 04/26/2017	Large Scale Nutrient Cycles (textbook chap. 20)
15	Mon 05/01/2017 Wed 05/03/2017	Microbial Symbiosis and Interaction with Humans (textbook chap. 22 and 23)
16	Mon 05/08/2017 Wed 05/10/2017	Repetition and Problem Solving session, Exam Part D
17	Mon 05/15/2017 Wed 05/17/2017	No classes
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Note

The instructor reserves the right to make changes to this syllabus as necessary.