Microbiology 480
Microbial Physiology & Diversity Syllabus

Instructor Information

Course Instructors:	Dr. Kristen M. DeAngelis Dr. James F. Holden
Office:	N435 Life Science Lab (DeAngelis) and N102A Morrill IV N (Holden)
Office Hours:	12:30-1:30 Tuesdays and Thursdays or by appointment
Telephone:	577-4669 (DeAngelis) and 577-1742 (Holden)
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Textbooks

Recommended: White, D.H., J. Drummond, and C. Fuqua (2012) The Physiology and Biochemistry of Prokaryotes, 4th Edition. Oxford University Press, New York.

Required: Brown, James W. (2015) Principles of Microbial Diversity. ASM Press, Washington D. C.

Course Goals

To provide knowledge on the various physiological and metabolic features of prokaryotic cells and the underlying biochemical principles that explain them, and to understand factors which explain complex microbial diversity patterns in the environment.

Examinations and Grading

All students will be expected to pass four non-cumulative examinations. These exams will consist of multiple choice, short answer, and diagrammatic questions that are designed for completion within the class period. Grading will be based on the average score for the four examinations and grading will be as follows:

Grade	Score
A	≥ 93%
A-	90-92.9%
B+	87-89.9%
B	83-86.9%
B-	80-82.9%
C+	77-79.9%
C	73-76.9%
C-	70-72.9%
D+	67-69.9%
D	60-66.9%
F	< 60%

Any students requiring extra assistance for examinations must contact the instructor and provide a letter of support from the University. Anyone found cheating on an exam will lose all points for that exam without an opportunity to retake it.

Schedule

Class: Tuesdays and Thursdays, 10:00-11:15 in 222 Morrill II

Date	Topic	Instructor	Reading
1/23	Cell structure & growth	Holden	White Ch. 1 & 2
1/25	Cellular energetics	Holden	White Ch. 4 & 8
1/30	Membrane electron transport	Holden	White Ch. 5
2/1	Membrane electron transport	Holden	White Ch. 5
2/6	Photosynthesis	Holden	White Ch. 6
2/8	Inorganic metabolism	Holden	White Ch. 13
2/13	Fermentation	Holden	White Ch. 15
2/15	**Examination I**		
2/20	Carbohydrate metabolism	Holden	White Ch. 7 & 9
2/22	C_1 metabolism	Holden	White Ch. 14
2/27	Cell wall and secreted proteins	Holden	White Ch. 12, 17, 18
3/1	Two-component systems/quorum sensing	Holden	White Ch. 19, 20, 22, 23
3/6	Environmental stress responses	Holden	White Ch. 16
3/8	**Examination II**		
3/13	**No Class – Spring Break**		
3/15	**No Class – Spring Break**		
3/20	How to measure microbial diversity	DeAngelis	Brown Ch. 1 & 2
3/22	Phylogeny	DeAngelis	Brown Ch. 4, 5 & 6
3/27	Microbiology of the early Earth	DeAngelis	Brown Ch. 24 & 7
3/29	Biofilms and motility	DeAngelis	White Ch. 21, Brown Ch. 12
4/3	Everything is everywhere…?	DeAngelis	Brown Ch. 22 & 23
4/5	**Examination III**		
4/10	Diversity of microbial mats	DeAngelis	Brown Ch. 8 & 9
4/12	Diversity of soils & sediments	DeAngelis	Brown Ch. 10 & 11
4/17	**No Class – Monday Class Schedule**		
4/19	Rare and uncultured microbes	DeAngelis	Brown Ch. 13 & 14
4/24	Diversity of human microbiome	DeAngelis	Brown Ch. 16, Walter & Ley
4/26	Diversity of permafrost	DeAngelis	Brown Ch. 15
5/1	Viruses and prions	DeAngelis	Brown Ch. 17
Finals	**Examination IV**		