Course Syllabus

CEE 6311: *Microbial Principles*

1. **Course description and objectives.** This course is an overview of basic and applied themes in microbiology. The course introduces principles of microbiology including microbial diversity, microbial evolution, metabolic diversity, and microbial ecology. Microbial processes for industrial and biotechnological applications will be discussed. Specific topics related to environmental engineering will receive particular focus, including microbial nutrition and growth, water and wastewater microbiology, biochemical thermodynamics, and microbial kinetics. Specific learning outcomes are to:

   *Cultivate an appreciation for the diversity and function of microbial life in natural and engineered systems

   *Develop an understanding of key linkages between microbial and engineering processes

   *Use the scientific method to evaluate microbial processes

   *Use principles of microbiology to explain, predict, and harness the activity of microbial communities in natural and engineered systems

2. **Course structure**. The course consists primarily of lectures and moderated critical discussion.

3. **Instructor**. Kostas Konstantinidis, Office: 3202 ES&T, Phone: 404-385-3628

   Email: kostas@ce.gatech.edu; Lab: http://enve-omics.gatech.edu

4. **Course website**: Canvas. All lecture slides will be posted, and lectures will be recorded and posted for later view or for asynchronous consumption.

5. **Evaluation.** Students will be graded based on short reports, homework assignments, and three exams.

- **Short reports**. At least 2 short reports on peer-reviewed papers will be due throughout the semester, on topics we are currently covering. These are intended to help you with reading and interpreting the peer-reviewed literature in environmental microbiology. More details will be given in class.
- **Homework**. Homework assignments must be uploaded at the start of class on the due date. No homework assignments will be accepted late unless a prior arrangement has been made with the instructor. You may work alone or in groups to complete the homework assignments, but you should solve each problem and turn in your own solutions. If you do work in groups, indicate the names of the students you worked with at the top of your homework set.
- **Examinations**. Two examinations will be given during the term; see course schedule for tentative exam dates. The final exam is comprehensive.

- **Grade determination**. The final grade will be calculated as follows: short reports (10%), homework (5%), exam I (25%), exam II (25%), final exam (35%).

6. **Academic integrity.** Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ (Links to an external site.) or http://www.catalog.gatech.edu/rules/18/ (Links to an external site). Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

7. **Accommodations for students with disabilities.** If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or http://disabilityservices.gatech.edu/ (Links to an external site), as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.