



Department of Computer Science & Engineering

Fall 2014

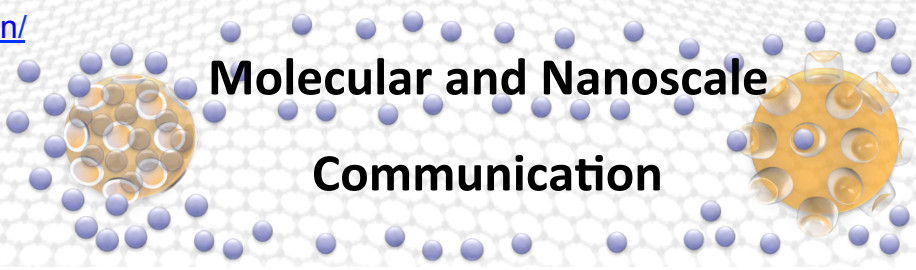
# CSCE 990 – Molecular and Nanoscale Communication

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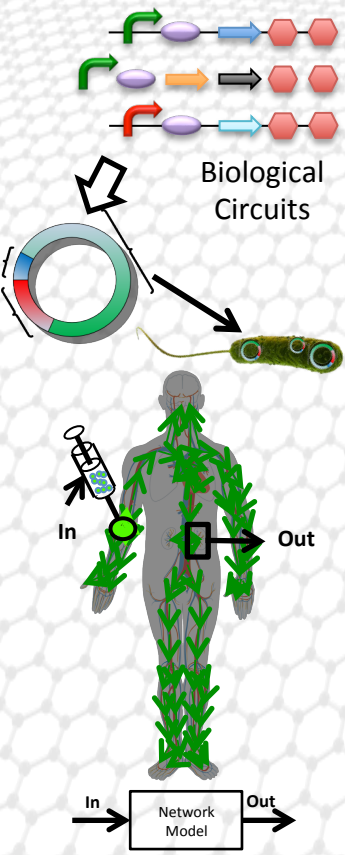
**Section:** 004  
**Credit Hours:** 3  
**Instructor:** Massimiliano Pierobon  
**Schedule:** MWF, 11:30AM - 12:20PM  
**Location:** Nebraska Hall W106

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## Molecular and Nanoscale Communication



The goal of this course is to develop an understanding of the different options to realize communication at the nanoscale among nano-precise entities, or nanomachines, being them genetically engineered biological cells or man-made nanodevices. The specific focus will be on bio-inspired communication through molecule exchange, called Molecular Communication. Different techniques to realize nanomachines will be surveyed in the course, with particular attention to the tools provided by synthetic biology for the programming of biological cooperative networks.

**Good standing graduate students from Computer Science and Engineering, Electrical Engineering, Chemical Engineering, Biology, Chemistry, Chemical and Biomolecular Engineering, and Mathematics are welcome to attend this course.** *Most of the necessary concepts from physics, chemistry, and biology, as well as from systems and communication engineering, will be provided during the lectures to accommodate students with different backgrounds, and let them benefit from a truly interdisciplinary approach.* Student creativity, passion, and open-minded attitude will be highly appreciated and rewarded.

The Molecular and Nanoscale Communication course will also include semester-long projects, both theoretical and practical. This class will give a chance to be initiated to a very exciting cutting-edge research field, which will soon influence many diverse research fields, such as engineering, chemistry, biology, and medicine.