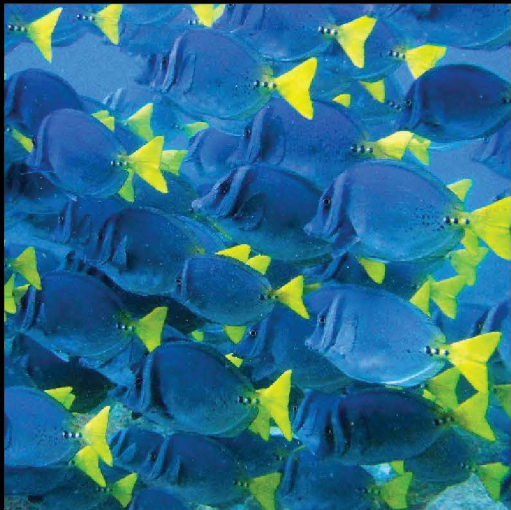
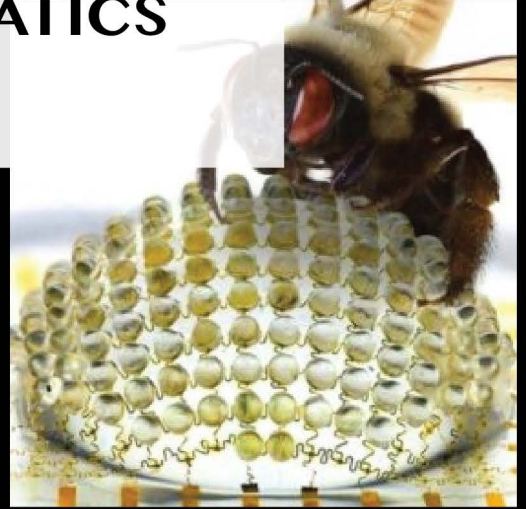
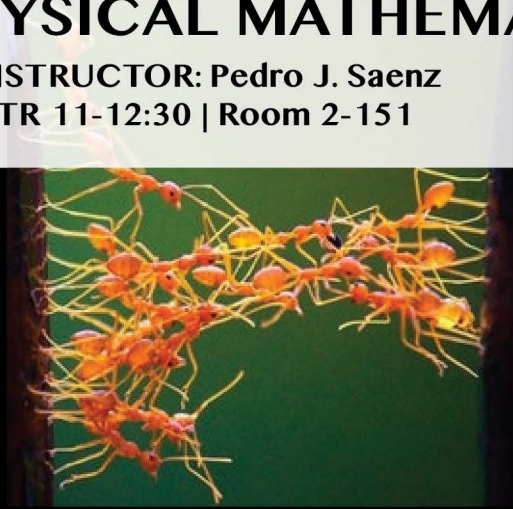
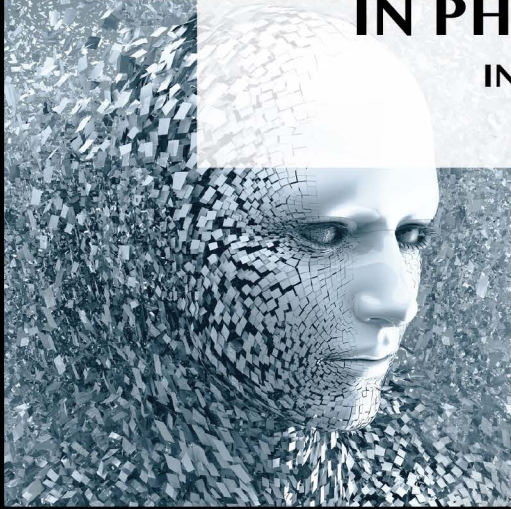


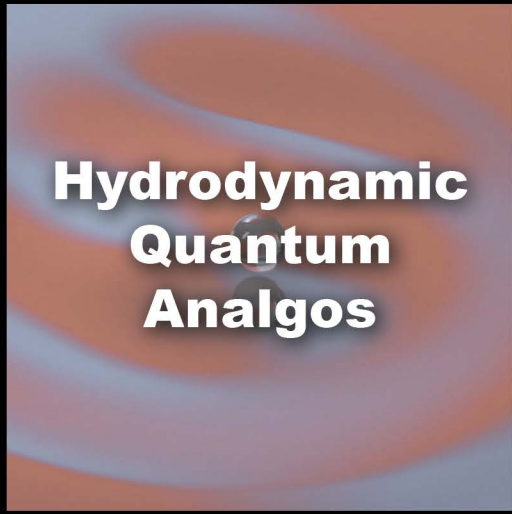
Fall 2018
**18.384 UNDERGRADUATE SEMINAR
 IN PHYSICAL MATHEMATICS**

INSTRUCTOR: Pedro J. Saenz
 TR 11-12:30 | Room 2-151

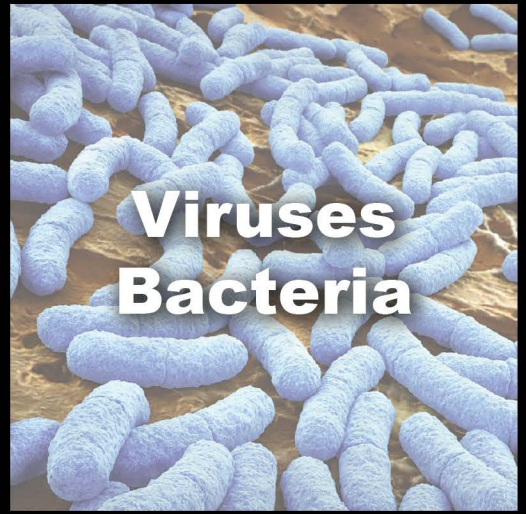




Active Networks



**Hydrodynamic
Quantum
Analgos**



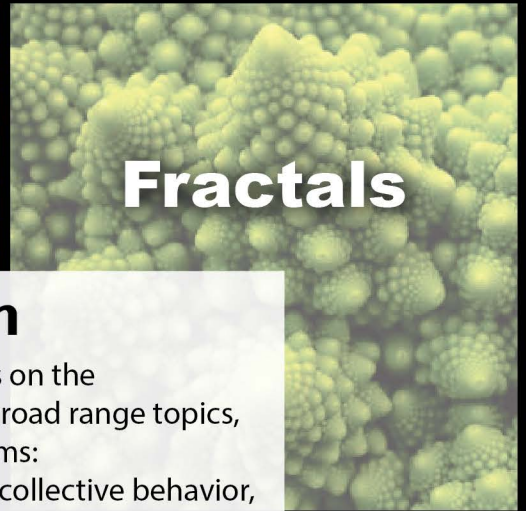
**Viruses
Bacteria**



Gambling



**Animal
Locomotion**

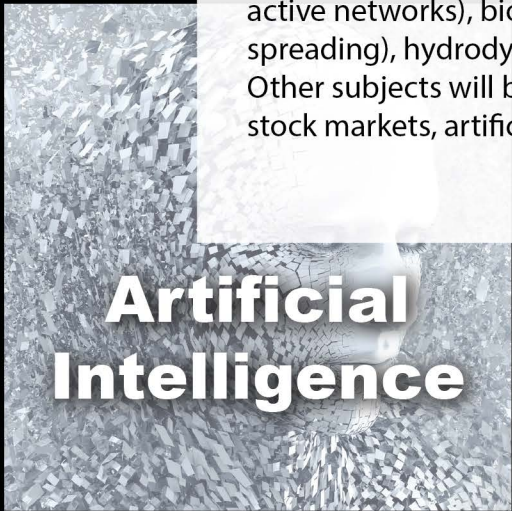


Fractals

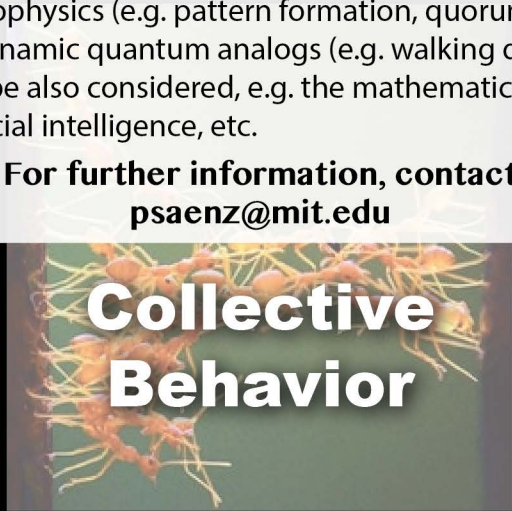
Course Description

Mathematical modeling of physical systems, with emphasis on the reading and presentation of research papers. Addresses a broad range topics, with particular focus on applied physics in continuum systems: fluid dynamics (e.g. animal locomotion), active matter (e.g. collective behavior, active networks), biophysics (e.g. pattern formation, quorum sensing, disease spreading), hydrodynamic quantum analogs (e.g. walking droplets), etc. Other subjects will be also considered, e.g. the mathematics of gambling and stock markets, artificial intelligence, etc.

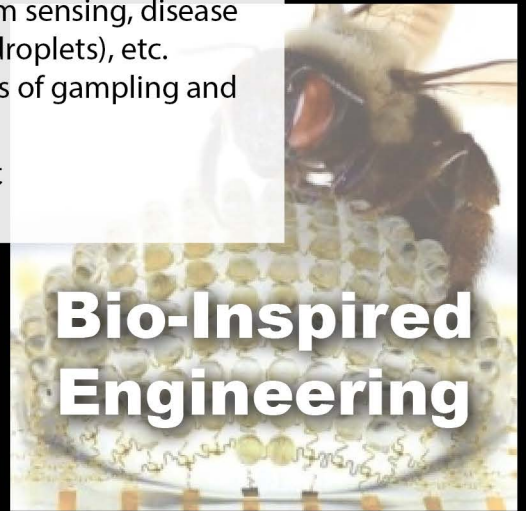
For further information, contact
psaenz@mit.edu



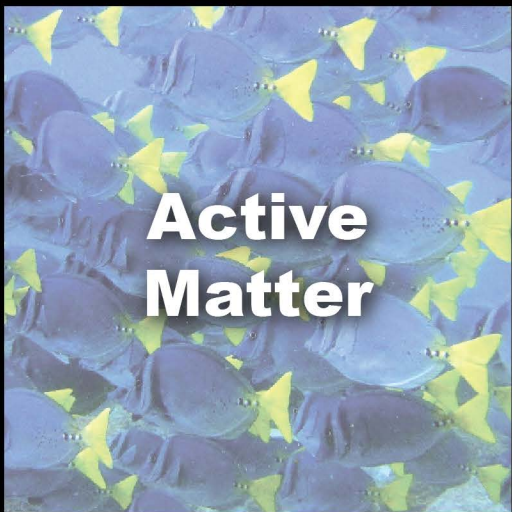
**Artificial
Intelligence**



**Collective
Behavior**



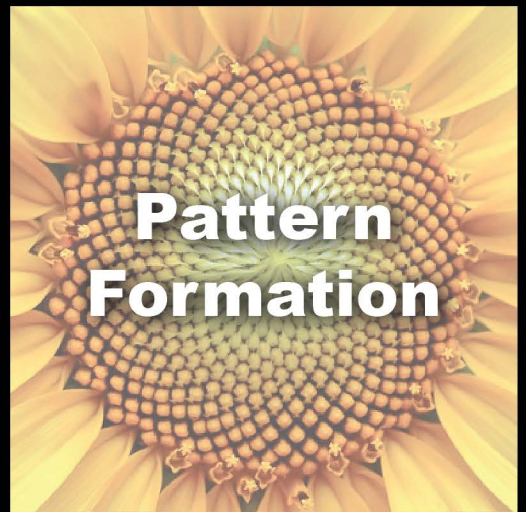
**Bio-Inspired
Engineering**



**Active
Matter**



**Stock
Markets**



**Pattern
Formation**