



Spring 2025
18.357 INTERFACIAL PHENOMENA
INSTRUCTOR: John W. M. Bush
LECTURES: MW 3-4:30 PM, Room 2-151

Prereq: 18.354, 18.355, 12.800, 2.25, or permission of Instructor

We consider fluid systems dominated by the influence of interfacial tension. The roles of curvature pressure and Marangoni stress are elucidated in a variety of situations. Particular attention will be given to the dynamics of drops and bubbles, soap films and minimal surfaces, wetting phenomena, water-repellency, surfactants, Marangoni flows, capillary origami and contact line dynamics. Theoretical developments will be accompanied by classroom demonstrations. The role of surface tension in biology will be highlighted, as will be hydrodynamic quantum analogs.

For further information, please contact Prof. Bush at bush@math.mit.edu or consult his webpage: <http://www-math.mit.edu/~bush/>

