SIO 285 Physical-Biological Interactions Peter J.S. Franks Spring 2015

Date	Topic
March 31	Introduction, calculus, scaling, dimensional analysis
April 2	Flux, flux divergence
April 7	Momentum equations
April 9	Stream functions, swimming, accumulation
April 14	Low Reynolds number flows and biology
April 16	Turbulence
April 21	Small-scale physical-biological interactions
April 23	Thin layers
April 28	Linear internal wave physics
April 30	Linear internal wave biology
May 5	Nonlinear internal waves
May 7	Mixed-layer physics
May 12	Mixed-layer biology
May 14	Fronts
May 19	Meanders, instabilities, and sub-mesoscale dynamics
May 21	Wind-driven upwelling, downwelling and relaxation
May 26	Tidal fronts
May 38	Special topic
June 2	Student presentations
June 4	Student presentations

• Class web site: spiff.ucsd.edu/SIO285 - has lecture notes, problem sets, etc. (Note capital "SIO" in url.)

• Class will be from 9:30 - 10:50, Tuesdays and Thursdays

• Marking: 40% problem sets

60% term project

1-page abstract for term project due April 28

Feel free to talk with me before then to discuss the project
Term projects will be oral presentations during exam week. Talks will be AGU/ASLO style: (from the ASLO web site: "Talks will be scheduled in 15-minute time slots. We strongly encourage a presentation of no more than 12 minutes to allow three minutes for discussion and to entertain questions from those in the audience. The time limit will be strictly enforced to facilitate movement between sessions.")
Also hand in a two page plus figures summary of talk

• Work together on problem sets - get to know each other

• Text is my notes. You may also find Mann and Lazier useful, as well as other PO and BO texts.

• Lots of good material in the primary literature – download the papers I cite, and read them.