

SIO 285 Physical-Biological Interactions Syllabus
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Spring 2017

Date	Topic
April 4	Introduction, calculus, scaling, dimensional analysis
April 6	Flux, flux divergence
April 11	Momentum equations
April 13	Stream functions, swimming, accumulation
April 18	Low Reynolds number flows and biology
April 20	Turbulence
April 25	Small-scale physical-biological interactions
April 27	Thin layers
May 2	Linear internal wave physics
May 4	Linear internal wave biology
May 9	Nonlinear internal waves
May 11	Mixed-layer physics
May 16	Mixed-layer biology
May 18	Fronts
May 23	Bryce Inman
May 25	Jessica Garwood
May 30	Meanders, instabilities, and sub-mesoscale dynamics
June 1	Wind-driven upwelling, downwelling and relaxation
June 6	Student presentations
June 8	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 27

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.