**Physics 6321**
**Coastal oceanography**

- Instructor: Dr. Iakov Afanassiev
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- Course Times: TBD Room TBD
- Office Hours: unlimited
- Web Page: http://www.physics.mun.ca/ ~ yakov

- **Textbook:** A.E. Gill, *Atmosphere-ocean dynamics*, Academic Press (1982).

**Reference Books:**

- G. T. Csanady, *Circulation in the Coastal Ocean*, Kluwer, Dordrecht (1984)
- J. Pedlosky, *Waves in the ocean and atmosphere*, Springer-Verlag, Berlin (2003).
- P.K. Kundu and I.M. Cohen, *Fluid Mechanics*, Academic Press, San Diego (2002)

**Course Outline:**

- Review of the equations of motion: Mass, Momentum eqs., Coriolis, Stratification, Hydrostatic, Boussinesq Approximations, Shallow water eqs., Potential vorticity.
- Review of elementary models: Geostrophy, Ekman, Inertial oscillations.
- Response to wind. Seiches. Poincare and Kelvin waves
- Stratified fluid. Internal waves. Baroclinic instability. Upwelling.
- Flows over topography
- Gravity currents

## Marking

- Assignments - total 20%
- Mid-semester presentation/lecture - 20%
- Project - paper 40 % + final presentation 20%