ENSC 312 Check points:

scales of motion	mesoscale	microscale	local scale
PBL / ABL	free convection	turbulence	fluxes
radiation balance	instability	convection	conduction
buoyancy	albedo	advection	roughness layer
laminar BL	conduction	1st Law of Thermo.	radiant energy
kinetic energy	constant flux layer	potential energy	thermal energy
flux-gradient	heat capacity	specific heat	diffusivity
conductivity	admittance	expon. decay/relax'n	Stephan-Boltzmann
Kirchoff's Law	Wien's Law	Cosine Law	$Q^* = Q_H + Q_E + Q_G + ...$
shortwave radiation	longwave radiation	black body	water balance
eddy diffusivity	stability correction	DALR	momentum flux
friction velocity	roughness length	log profile	Reynold's decomp.
surface shear stress	eddy correlation	mixing length	profile methods
similarity	Bowen ratio	electricity analog	Penman-Monteith
air pollution:	emissions	sources	constituents
dispersion	stability effects	plume types	Gaussian plume model
climates of:	non-vegetated	snow and ice	water
vegetated surfaces	complex terrain	sea-breeze	mountain/valley circ'n
clothesline	leading edge	oasis	climate modifications
Beer's law	throughfall	interception	zero plane displacement
urban climates	urban heat island	sky view factor	wind load
photosynthesis	CO_2 assimilation	lower/upper critical temp.	thermal cover

Final exam format and example questions:

This closed book exam is out of 35 marks and will last 3 hours. Bring a calculator, pencil, and ruler. You will answer on the exam sheets. There will be 4 multi-part questions:

1. Ten "define and explain in the context of this course" (e.g. words from above list). (10 marks)

2. A multi-part short answer question that may include a figure (e.g. explain the transfer of heat in soils or the sea breeze circulation) (10 marks)

3. Choose one calculation question from at least two (e.g. calculate the Richardson number for a given temperature/wind speed profile). (5 marks)

4. Choose one essay question from at least two (e.g. discuss how turbulent fluxes are evaluated in the atmosphere) (10 marks).

Formulas and constants needed for any calculations will be provided, although you will need to recognize which to apply and how. The final exam is scheduled for **Saturday, 8 December 2018** from 6:00 p.m. - 9:00 pm in room 5f-122. Feel free to drop by at any time should you have any questions on the course material. Call (960-5985) or email (peterj@unbc.ca) to make an appointment to review course material.