**Module 1 Intro to Sustainable Development**

* describe the drivers of sustainable development

global changes in population, wealth, and health that have occurred since the 1950s

1. World Population Growth
2. Increasing per Capita Consumption
3. IPAT Equation -> IMPACT = (POPULATION)x(AFFLUENCE)x(TECHNOLOGY) UNITS!!!

* define sustainable development and a variety of sustainability terms

**Sustainable Development**: Growing Economic Subsystem VS finite biosphere

**Carrying capacity**: number of people who can be supported over a very long period of time by the natural, social, human, and built capital existing within a specified area

**Biocapacity**: represents the productivity of land areas, including forests, pastures, cropland, and fisheries

**Eco-Footprint**: measurement of the current human demand on the earth's ecosystems.

* provides an estimate of the area of biologically productive land and sea needed to sustainably support human activities in a given year.
* unit of measure (area/year)

**Natural capital**: land, air, water, living organisms and all formations of the Earth's biosphere that provide us with ecosystem goods and services imperative for survival and well-being.

* summarize the December 2015 International Agreement on Climate Change and some of it's implications for engineering practice in Canada
* ~~engineers should be concerned about the amount of Green House Gases (GHGs) emitted during the life-cycle of the project~~
* **~~GHG~~**~~: any gas in the atmosphere which absorbs and re-emits heat and thereby keeps the atmosphere warmer than it otherwise would be~~
* **~~Global Warming Potential (GWP) of a GHG~~**~~: an index expressing the amount of atmospheric warming a gas causes over a given period of time in comparison to carbon dioxide (CO2)~~
  + ~~standardized common unit is CO~~~~2~~ ~~Equivalents or CO~~~~2~~~~e~~
* **~~carbon footprint~~**~~: describes the contribution to global warming of a human activity~~
  + ~~measured as the area of productive land and sea required to sequester (absorb) the equivalent CO~~~~2~~ ~~emitted by the activity.~~
  + ~~unit of measure is Global Hectares~~

***For CIVL 200, it is expected that you will be able to summarize the 5 outcomes of COP21 as described below.***

* ~~adopted by 195 countries (representing over 95% of the world's population)~~
* limit the global temperature increase to well below 2 degrees Celsius, while aiming to limit the increase to 1.5 degrees;
* Establish binding commitments by all parties to make "national determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
* Commit to regularly reporting national emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
* Extend the current goal of mobilizing $100 billion a year in support to poorer countries by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
* Call for a new mechanism enabling emissions reductions in one country to be counted toward another country's NDCs.