



ENR 5268: *Soils and Climate Change*

SPRING SEMESTER 2021 • 3 CR

TUESDAYS and WEDNESDAYS 2:20 – 3:40PM • ONLINE

This course is jointly taught by Dr. Rattan Lal, School of Environment and Natural Resources and Dr. Berry Lyons, School of Earth Sciences, and is designed for undergraduate and graduate students.

The following will be covered:

- Atmospheric chemistry, major and trace gases and their radiative properties
- Fate and transport of carbon in aquatic ecosystems
- Radiative forcing and global warming potential
- Permafrost and the global carbon cycle and the feedback due to global warming
- The global carbon cycle over geologic time
- Carbon sequestration strategies
- Biogeochemical processes control the geologic C cycle
- Terrestrial, geologic and oceanic sequestration: potential and challenges
- Past climate changes, abrupt climate change
- Processes and practices affecting soil carbon sequestration
- Sources and sinks of greenhouse gases in the world
- The biofuel conundrum
- The current global carbon cycle
- The biochar carbon
- Anthropogenic perturbation of the global carbon cycle, and fossil fuel emissions
- Soil carbon and soil quality
- Coupled cycling of C, H₂O, N and other elements
- Trading carbon credits: practice and policy
- Soil erosion and the carbon cycle

No prerequisites • No exams • Undergraduates and Graduates welcome

Please contact Dr. Lal at lal.1@osu.edu with any questions.

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