

Introduction to Earth System Science

Prosenjit Ghosh

Role of topography and geology during interaction of Earth system processes; composition of Lithosphere, Atmosphere, Hydrosphere and Biosphere; Earth surface processes and its effect on earth systems, earth as a dynamic planet; Early atmosphere, evolution of atmosphere through time, evolution of hydrosphere and general circulation of ocean through time; Long and short term history of cryosphere; fossilization; Geochemical evidences documenting origin of life; extinction events, biosphere on land and ocean, Great oxygenation Event (GOE); Paleobiology; Microfossils; Indian climate present day and past; Global paleoclimatic record; Palaeo-monsoon record and the role of tectonics and green house forcing.

Practical: Project on spatial and temporal evolution of earth system

References

- Merritts, D., Dewet, A., and Menking, K., Environmental Geology: An Earth System Science Approach, 1998.,Freeman, W.H.,
- Jacobson, M.C., Charlson, R.J., Rodhe, H., and Orians, G.H., Earth System Science, Academic Press, 2000.,Merritts, D.,
- Dewet, A., and Menking, K., Environmental Geology: An Earth System Science Approach, 1998

Jan 2022

ES 201

