

Semester	JAN 2022
Open to semester	4
Course code	<b>EC2233</b>
Course title	<b>The Solid Earth</b>
Credits	3 /
Course Coordinator & participating faculty (if any)	Arjun Datta
Nature of Course	Lectures and Tutorials
Pre-requisites	None
Objectives (goals, type of students for whom useful, outcome etc)	This is the foundation course for the discipline of geophysics.
Course contents (details of topics /sections with no. of lectures for each)	<p>A) The Earth system and Earth's Interior – Earth as a planet; one-dimensional structure</p> <p>B) Plate Tectonics – the lithosphere; plate motions and geometry – tectonics on a sphere, rotation vectors and rotation poles, triple junctions, absolute plate motions; plate margins and accompanying geological structures; Wadati-Benioff zones and subduction; spreading centres and magnetic lineations; hot spots; pattern of mantle convection</p> <p>C) Heat Transfer – thermal structure of Earth, geotherms, surface heat flux, global energy budget</p> <p>D) Gravity – gravitational potential, figure of the Earth, rotation and ellipticity</p> <p>E) Geomagnetism – the geomagnetic field, dynamo mechanism, secular variation, rock magnetism and palaeomagnetism</p>
Evaluation /assessment	<p>End-Sem Examination-40%</p> <p>Mid-Sem Examination-30%</p> <p>Others-30%</p>
Suggested readings (with full list of authors, publisher, year, edn etc.)	<p>Books:</p> <ol style="list-style-type: none"> <li>1. Stacey, Frank D. and Davis, Paul M (2008) Physics of the Earth. Cambridge University Press.</li> <li>2. Fowler, C.M.R. (1990). The Solid Earth: An Introduction to Global Geophysics. Cambridge University Press.</li> </ol>