

Semester	JAN 2022
Open to semester	8
Course code	EC4213
Course title	Exploration Seismology Lab
Credits	3 /
Course Coordinator & participating faculty (if any)	Sudipta Sarkar*, Rahul Dehiya
Nature of Course	Lab
Pre-requisites	Exploration Seismology, Sequence Stratigraphy
Objectives (goals, type of students for whom useful, outcome etc)	<p>The objective of this course is to provide students with the opportunity to develop hands-on experience of various seismic analysis techniques. The course will cover the essential geological and geophysical information necessary to visualize and analyze seismic data. The students will gain a solid understanding of the applications in studies that involve pre/post-stack seismic attributes, seismic sequence stratigraphy, seismic geomorphology, and multidisciplinary integration.</p> <p>Outcome: The course is dedicated to advance seismic data analysis techniques using practical exercises. It will guide the students in the understanding that the integration of geological data into the seismic model will add value in coherent and successful seismic predictions that result from an interpretation.</p>
Course contents (details of topics /sections with no. of lectures for each)	<p>A. Near-surface seismic experiment: Seismic data acquisition with 24-channel engineering seismograph, data processing and analysis</p> <p>B. Seismic data processing: Data input Geometry Denoise Demultiple Velocity analysis (iterative) Stack and Migration</p>

	<p>C. Interpretation: 2D/3D interpretation-Integrate with geological information (essential to have good understanding of sedimentary geology and sequence stratigraphy)</p>
Evaluation /assessment	<p>End-Sem Examination-80% Mid-Sem Examination-20% Others-%</p>
Suggested readings (with full list of authors, publisher, year, edn etc.)	<p>1. 3-D Seismic Interpretation, Bacon, Simm and Redshaw. Cambridge University Press, ISBN 9780511802416, 2003.</p> <p>2. Seismic Attributes for Prospect Identification and Reservoir Characterization, by Satinder Chopra and Kurt J. Marfurt, Pages: 481, Publisher: Society of Exploration Geophysicists</p>