

Semester	AUG 2022
Open to semester	5,21
Course code	EC3154/EC6164
Course title	Sedimentology and Stratigraphy
Credits	4 /4
Course Coordinator & participating faculty (if any)	Sudipta Sarkar
Nature of Course	Lectures
Pre-requisites	Earth and Planetary Materials should be taken in parallel.
Objectives (goals, type of students for whom useful, outcome etc)	<p>Objectives: This course will aim to bring into focus the processes that influence the formation of sediments and sedimentary rocks, their physical, chemical, and biological properties and evolution of sedimentary processes through geologic time.</p> <p>Outcome: The students will become familiar with sediment transport, major sedimentary rock types and deposition in modern sedimentary environments. They will be able to establish stratigraphic relationships in sedimentary basins. It is expected that the students will be able to understand evolution of sedimentary processes through geologic time as gleaned from sedimentary rock record.</p>
Course contents (details of topics /sections with no. of lectures for each)	<ol style="list-style-type: none"> 1. Fundamentals of sedimentary geology: Sediments – types and origin, weathering, erosion. 2. Siliciclastic sedimentary rocks: Conglomerate, Sandstone, shale, classification of sandstone, diagenesis of siliciclastic sediments, organic matter diagenesis. 3. Concepts of fluid movement and sediment transportation. 4. Sedimentary structures at different scales, post depositional sedimentary structures. 5. Sedimentary environment: Alluvial fan, fluvial, delta, Delta, Barrier bar, submarine fan 6. Facies and facies reconstruction. 7. Biogenic sediments, carbonates and their classification, key elements of modern and past carbonate depositional environments. 8. Principles of Stratigraphy: Lithostratigraphy,

	biostratigraphy, chronostratigraphy.
Evaluation /assessment	End-Sem Examination-40% Mid-Sem Examination-40% Others-20%
Suggested readings (with full list of authors, publisher, year, edn etc.)	<ol style="list-style-type: none"> 1. Principles of Sedimentology and Stratigraphy, (2006), by Boggs, S., Jr., Prentice Hall. 2. Sedimentary geology, (2004), by Prothero, D. R., & Schwab, F., Macmillan. 3. Sedimentary Petrology, (2006), by Tucker, M. E., Blackwell Publishing. 4. Sedimentary structures, (1988) by Collinson, J. D. & Thompson, D. B., Harper Collins Publishers Ltd. 5. Sedimentology and Stratigraphy, Second Edition (2009), by Nichols, G., Wiley Blackwell. 6. Sedimentary rocks, (1975), by Pettijohn, F.J., Harper and Row Publ. New Delhi.