Sl. No.	Sub. Code	Theory	Contact Hours			Credit
			L	T	P/S	
2.	22AR823	Disaster Resilient Architecture	3	0	1	3

Course Objective	The course is framed to provide an overview of the occurrence, causes and consequences of disaster and understanding of fundamental concepts and application of disaster resilient design.
Anticipated Learning Outcomes:	Ability to understand and formulate management plans and disaster mitigation strategies in buildings.
Module 1 Introduction	Overview of disaster, major natural disasters - flood, tropical cyclone, droughts, landslides, heat waves, earthquakes, fire hazards etc; Hazard (earthquake and cyclone) map of the world and India
Module 2 Design for Cyclone	Climate change and its impact on tropical cyclones; Nature of cyclonic wind; Behaviour of structures in past cyclones and wind storms, case studies. Cyclonic retrofitting– strengthening of structures and adaptive sustainable reconstruction; Life-line structures such as temporary cyclone shelter. General planning/design considerations, Norms and Standards for wind storms and cyclones; Coastal zoning regulation for construction and reconstruction phase in the coastal areas; innovative construction materials and techniques; traditional construction techniques in coastal areas.
Module 3 Design for Earthquake	Causes of earthquake; Past effects of earthquake on ground and building - Behaviour of various types of buildings, structures, and collapse patterns; Seismic retrofitting - Weakness in existing buildings, concepts in repair, restoration and seismic strengthening. General Planning and design consideration, Norms and Standards; Various types and construction details - Foundations, retaining walls, plinth fill, flooring, walls, openings, roofs and boundary walls.

	Innovative construction materials and techniques, traditional regional practices
Module 4 Disaster Management	Strategies for disaster prevention and mitigation; Disaster management plan; National crisis management committee; state management group.
Module 5	Exercises on design and construction techniques for disaster resilient buildings.

Note: Most Architectural subjects do not have Textbooks. The Reference books mentioned below are for reference only and University question paper should be prepared from the Syllabus descriptions.

References

1. *Aga Khan Award for Architecture. Ed. Shelter. (1996). The Access to Hope. AKDN, Istanbul and Geneva.*
2. *Agarwal, P. and Shrikhande, M. (2009). Earthquake Resistant Design of Structures. New Delhi: PHI Learning.*
3. *Singh, P. P. and Sharma, S. (2006). Modern dictionary of natural disaster. Deep and Deep Publications.*
4. *Simiu E. and Scanlan R. H. (1996). Wind Effects on Structures-Fundamentals and Applications to Design. 3rd Edn., John Wiley.*
5. *Sinha, P. C. (2006). Disaster Mitigation, preparedness, recovery and Response. New Delhi: SBS Publishers.*
6. *Talwar, A. K. and Juneja, S. (2009). Cyclone Disaster Management. Commonwealth Publishers.*
7. *Taranath, B. S. (2004). Wind and Earthquake Resistant Buildings: Structural Analysis and Design. CRC Press.*
8. *U.N.D.P. (2004). Reducing Disaster Risk: A Challenge for Development. New York: UNDP.*
9. *World Bank. (2009). Handbook for Reconstructing after Natural Disasters.*
10. *Seismic Design hand book for Buildings*
11. *Earthquake Architecture: New construction techniques for quake disaster Prevention.*