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Disaster Management — Complete Syllabus (Open Elective-01, Option A)

BTEUP Diploma in Civil Engineering • 5th Semester • Session 2026-27

Subject 5.6 (Open Elective-01, Option A) • 50 Marks Internal Only • 2 Credits • L 2 • Total
NA — not counted in semester total • Choose this OR Project Management (OR Advance
Skill Development)

Examination Scheme

Code	Paper	Type	L - P	Credits	Internal	External	Total
5.6	Open Elective-01: Disaster Management	Theory	2 - 0	2	50	—	NA
Open Elective-01 Total				2	50	—	NA

What This Subject Aims To Do

To learn about various types of natural and man-made disasters, know pre- and post-disaster management for some of the disasters, know about various information and organisations in disaster management in India, and get exposed to technological tools and their role in disaster management.

Unit-Wise Complete Topic List

Unit	Topic	Periods	Marks Share
1	Understanding Disaster	5	15%

2	Types, Trends, Causes, Consequences and Control of Disasters	6	25%
3	Disaster Management Cycle and Framework	6	25%
4	Disaster Management in India	5	15%
5	Applications of Science and Technology for Disaster Management	6	20%

Unit 1 — Understanding Disaster (5 Periods, 15%)

Topics: Understanding the concepts and definitions of disaster, hazard, vulnerability, risk, capacity — disaster and development, and disaster management.

Unit 2 — Types, Trends, Causes, Consequences and Control of Disasters (6 Periods, 25%)

Topics: Geological disasters (earthquakes, landslides, tsunami, mining); hydro-meteorological disasters (floods, cyclones, lightning, thunder-storms, hail storms, avalanches, droughts, cold and heat waves); biological disasters (epidemics, pest attacks, forest fire); technological disasters (chemical, industrial, radiological, nuclear) and manmade disasters (building collapse, rural and urban fire, road and rail accidents, nuclear, radiological, chemicals and biological disasters); global disaster trends — emerging risks of disasters — climate change and urban disasters.

Unit 3 — Disaster Management Cycle and Framework (6 Periods, 25%)

Topics: Disaster management cycle — paradigm shift in disaster management. Pre-disaster — risk assessment and analysis, risk mapping, zonation and micro-zonation, prevention and mitigation of disasters, early warning system; preparedness, capacity development; awareness. During disaster — evacuation — disaster communication — search and rescue — emergency operation centre — incident command system — relief and rehabilitation. Post-disaster — damage and needs assessment, restoration of critical infrastructure — early recovery — reconstruction and redevelopment; IDNDR, Yokohama Strategy, Hyogo Framework of Action.

Unit 4 — Disaster Management in India (5 Periods, 15%)

Topics: Disaster profile of India — mega disasters of India and lessons learnt; Disaster Management Act 2005 — institutional and financial mechanism, National Policy on Disaster Management, National Guidelines and Plans on Disaster Management; role of government (local, state and national), non-government and inter-government agencies.

Unit 5 — Applications of Science and Technology for Disaster Management (6 Periods, 20%)

Topics: Geo-informatics in disaster management (RS, GIS, GPS and RS); disaster communication system (early warning and its dissemination); land use planning and development regulations, disaster safe designs and constructions, structural and non-structural mitigation of disasters; S&T institutions for disaster management in India.

Instead of This Elective — Advance Skill Development

The 5th-semester scheme allows an **Advance Skill Development** certification course to be taken **instead of** Open Elective-01. The course named in the scheme is **Advanced Plumbing (TATA TECH.)**. No detailed contents for this certification course are given in the PDF. Students present a seminar/viva on their Advance Skill Certification along with certificate, project and report.

Reference Books (as listed in the syllabus)

- Publications of National Disaster Management Authority (NDMA) on Various Templates and Guidelines for Disaster Management.
- Bhandani, R. K., An overview on natural & man-made disasters and their reduction, CSIR, New Delhi.
- Srivastava, H. N., and Gupta G. D., Management of Natural Disasters in developing countries, Daya Publishers, Delhi.
- Alexander, David, Natural Disasters, Kluwer Academic London.
- Ghosh, G. K., Disaster Management, A P H Publishing Corporation.
- Murthy, D. B. N., Disaster Management: Text & Case Studies, Deep & Deep Pvt. Ltd.
- D.V.Gupta, Vikram Singh, Earthquake Engineering & Disaster Management, Asian Publishers, Muzaffarnagar, ISBN No. 978-93-91541-54-5.

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Source: BTEUP 3rd Year curriculum (folder2627), approved in C.D.C. meeting held on 16.07.2026. Topic lists follow the official syllabus; short explanations are the author's own plain-English summaries, not syllabus text. Please confirm with your own polytechnic for any local changes.