

GUJARAT TECHNOLOGICAL UNIVERSITY

CIVIL (TOWN & COUNTRY PLANNING) (48)

PLANNING FOR DISASTER MANAGEMENT

SUBJECT CODE: 2724804

SEMESTER: II

Type of course: Major Elective - II

Prerequisite: Basic understanding on urbanizations, issues in cities and types of risks.

Rationale: The course helps developing understanding regarding hazard typology, disasters, risks involved with remedial actions with incorporation of the same in urban planning. The developed sensitization towards disaster mitigation shall help in building resilience for urban areas through planning tools used by students.

Teaching and Examination Scheme:

| Teaching Scheme | | | Credits | Examination Marks | | | | | | Total Marks |
|-----------------|----|---|---------|-------------------|--------|-----------------|-----|--------|----|-------------|
| L | T | P | C | Theory Marks | | Practical Marks | | | | |
| | | | | ESE (E) | PA (M) | ESE (V) | | PA (I) | | |
| | | | | | | ESE | OEP | PA | RP | |
| 3 | 2# | 2 | 5 | 70 | 30 | 20 | 10 | 10 | 10 | 150 |

Content:

| Sr. No. | Content | Total Hrs | % weightage |
|---------|--|-----------|-------------|
| 1 | Hazard and Disaster Meaning, factors and significance, Characteristic, causes and effects of natural hazards viz. Drought, earthquake, flood and other hazards. Disaster profile of India – regional and seasonal, Scope and objectives of disaster mitigation, preparedness and response. Prerequisite for preparedness planning, action plans and procedure, models and checklists. Disaster response planning, Emergency operation support and management; EOC planning and operations | 16 | 30 |
| 2 | Planning for disaster prone areas Vulnerability analysis, Land use planning and regulations, Temporary settlement and communications, development planning tasks at the pre-disaster and post-disaster stages. Shelter typology for different hazardous situations, Housing design and planning at pre and post disaster level; damage assessment. | 18 | 33 |
| 3 | Emergency camps and shelter Emergency camps, Vulnerability and low cost dwellings, Temporary and emergency shelter design at post disaster stage, Shelter components, materials, structures and erection, reconstruction strategies. | 12 | 22 |
| 4 | Roles of various organizations Policies and act for disaster management, guidelines, model building bylaw provisions in general and specific for earthquake and flood, various organizations working for planning and management of disaster | 8 | 15 |

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| | mitigation; duties and responsibilities at various levels, city disaster management plan, ward/ village disaster management plan, contingency plan | | |
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Reference Books:

1. Thomas Scheneid (2000), "Disaster Management and Preparedness", CRC Press.
2. Harsh K. Gupta (2003), "Disaster Management", Indian National Science academy.
3. Vinod K. Sharma (1997), "Disaster Management", National Center for Disaster Management.
4. GOI Publication (2011), "Disaster Management in India", Ministry of Home Affairs, NIDM
5. K. J. Anandha Kumar, Ajinder Walia (Compilers), "India Disaster Report 2012", National Institute of Disaster Management (2013)
6. Pramod K. Mishra, "The Kutch Earthquake 2001 – Recollections, Lessons and Insights", National Institute of Disaster Management (2012) (ISBN: 81-8347-000-9)

Course Outcome:

After learning the course the students should be able to:

Sensitization towards certain events and their implications and effects, statutory provisions and application in field practices by approach through planning efforts.

List of Experiments/ Studio (Practical):

1. Natural hazards – case study
2. Manmade hazards – case study
3. Understanding bylaw provisions in local area and identification of missing links with model bylaws
4. Flood zonation mapping exercise using Google earth images and city maps
5. Building typology and earthquake risk analysis exercise
6. Use of satellite images in disaster mitigation

Assignment work (Tutorial):

1. Students shall refer the books and reference materials and prepare answers to the assignment problems including the topics of syllabus.
2. Students independently to prepare a "Graduate Report" including different incidents; Innovative Technique and Practice and submit the same with presentation.
3. Students will independently study a case referring to latest hazard occurrence, refer to relevant documents and prepare brief report which shall be presented.

Research Paper (RP):

Each students shall study at least two research papers from the listed journals on GTU portal. Each paper shall be studied – students shall prepare brief report on paper and present the findings. The same shall be presented among all students and submit to university.

Open ended problem (OEP)

1. Which is the most catastrophic event striking on urban center? What was the impact? How the recovery measures were adopted? What is the current status of that center?
2. Which is the method to measure the impact of a hazard?
3. Why resilience capacity building is important for an urban center? Explain a case of a city that has been building resilience towards hazards.
4. Which are the organizations working in concern to the field of hazard/ disaster?
5. What are the requirements and usage of emergency operation centers?

Major Equipment:

Computers with higher configuration and internet, server.

List of Open Source Software/learning website:

- Cad drafting tools, Google earth (free ware)
- Google SketchUp Pro for Nonprofits
(<https://www.google.com/earth/outreach/grants/software/sketchup.html>)
- National Institute of Disaster Management (<http://nidm.gov.in/default.asp>)
- Gujarat State Disaster Management Authority (<http://www.gsdma.org/>)
- Gujarat Infrastructure Development Board (<http://www.gidb.org/>)
- GoI, Ministry of Home Affairs (<http://www.mha.nic.in/>)
- Google books on Planning for Disaster management
(https://www.google.co.in/search?q=Planning+disaster+management&btnG=Search+Books&tbo=1&gws_rd=ssl)

Review Presentation (RP): The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website