

|                              |                                                                                                                         |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Branch Name:</b>          | Civil Engineering (Offered to Other Departments)                                                                        |
| <b>Program Code:</b>         | ET106                                                                                                                   |
| <b>Course Title:</b>         | Disaster Management (Open Elective)                                                                                     |
| <b>Course Code:</b>          | 2ET1060681T                                                                                                             |
| <b>Pre-requisite Course:</b> | To develop basic understanding about conceptual applications of principles of Management to mitigate various disasters. |

**Course Objectives:**

1. Students learn about the risk, context, and impacts of disasters.
2. Students learn how to analyze the potential effects of disasters.
3. Students learn the technical skills needed to make effective decisions during disaster management.

**Teaching and Examination Scheme:**

| Credit | Teaching Scheme |   |   |       | Evaluation Scheme (Marks) |      |      |      |                   |      |      |      |               |
|--------|-----------------|---|---|-------|---------------------------|------|------|------|-------------------|------|------|------|---------------|
|        | Hours per week  |   |   |       | Theory (Marks)            |      |      |      | Practical (Marks) |      |      |      | Total (Marks) |
|        | L               | T | P | Total | SEE                       |      | CCA  |      | SEE               |      | CCA  |      |               |
|        |                 |   |   |       | Min.                      | Max. | Min. | Max. | Min.              | Max. | Min. | Max. |               |
| 3      | 3               | - | - | 3     | 24                        | 60   | 16   | 40   | --                | --   | --   | --   | 100           |

**Course Contents:**

| Unit No | Topic                                                                                                                                                                                                                                | Total Hours | Weight age (%) |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|
| 01      | <b><u>Understanding of Disasters:</u></b><br>Understanding the Concepts and definitions of Disaster, Hazard, Vulnerability, Risk, Capacity – Disaster and Development, and disaster management                                       | 8           | 20             |
| 02      | <b><u>Types of Disaster &amp; Disaster Management in India:</u></b><br>Geological Disasters, Hydro-Meteorological Disasters, Biological Disasters, Technological Disasters and Manmade Disasters, Mega Disasters of India,           | 12          | 30             |
| 03      | <b><u>Disaster Management Policy &amp; Practices</u></b><br>Disaster Management Act 2005 & Amendments , Publisher by Govt. of India Non- Government and Inter-Governmental Agencies, Role of Government (local, state and national), | 12          | 20             |
| 04      | <b><u>Applications of Science and Technology for Disaster Management:</u></b><br>Geo-informatics in Disaster Management (RS, GIS, GPS and RS) Disaster Communication System (Early Warning and Its Dissemination).                   | 10          | 30             |

**List of Text and Reference Books:**

1. Coppola DP, 2007. Introduction to International Disaster Management, Elsevier Science(B/H), London
2. Manual on natural disaster management in India, MC Gupta, NIDM, New Delhi
3. An overview on natural & man-made disasters and their reduction, RK Bhandani, CSIR, New Delhi
4. World Disasters Report, 2009. International Federation of Red Cross and Red Crescent, Switzerland
5. Roy, P.S. (2000): Space Technology for Disaster management: A Remote Sensing & GIS Perspective, Indian Institute of Remote Sensing (NRSA) Dehradun.
6. Sharma, R. K. & Sharma, G. (2005) (ed) Natural Disaster, APH Publishing Corporation, New Delhi.
7. Disasters in India Studies of grim reality, Anu Kapur & others, 2005, 283 pages, Rawat Publishers, Jaipur
8. Management of Natural Disasters in developing countries, H.N. Srivastava & G.D. Gupta, Daya Publishers, Delhi, 2006, 201 pages
9. Disaster Management Act 2005, Publisher by Govt. of India
10. National Disaster Management Policy, 2009, Govt. of India
11. Carter, W. Nick, 1991: Disaster Management, Asian Development Bank, Manila.

**E-Resources:**

1. [www.GIS.Development.net](http://www.GIS.Development.net)
2. [www.iirs.nrsa.org](http://www.iirs.nrsa.org)
3. [www.nidmindia.nic.in](http://www.nidmindia.nic.in)
4. <http://quakusgs.gov>

**Course Learning Outcomes (CLO):**

1. Understand disasters, disaster preparedness and risks.
2. Understand role of Engineering in remote sensing, GIS and GPS in risk reduction
3. Understand disaster management acts and guidelines along with role of various stakeholders during disasters.

**Course Learning Outcomes (CLO): On completion of this course, the students will be able to:**

| CLO  | Description                                                                                                  | Bloom's Taxonomy Level |
|------|--------------------------------------------------------------------------------------------------------------|------------------------|
| CLO1 | Understand disasters, disaster preparedness and risks.                                                       | L-1, L-2               |
| CLO2 | Understand role of Engineering, remote sensing, GIS and GPS in risk reduction.                               | L-5, L-6               |
| CLO3 | Understand disaster management acts and guidelines along with role of various stakeholders during disasters. | L-3                    |

L1- Remember, L2- Understand, L3- Apply, L4- Analyze, L5- Evaluate, L6- Create

**Mapping of CLOs with POs & PSOs**

| Course Learning Outcomes | Program Outcomes (POs) |      |      |      |      |      |      |      |      |       |       |       | Program Specific Outcomes (PSOs) |       |       |
|--------------------------|------------------------|------|------|------|------|------|------|------|------|-------|-------|-------|----------------------------------|-------|-------|
|                          | PO 1                   | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1                            | PSO 2 | PSO 3 |
| CLO1                     | M                      |      |      |      |      | H    |      |      | H    |       | H     |       |                                  |       |       |
| CLO2                     | H                      | H    | H    | H    | H    | H    |      | H    | H    | H     | H     | H     | H                                | H     | H     |
| CLO3                     | H                      | H    | H    |      |      | H    | H    | H    | H    | H     | H     | H     | H                                | H     | H     |

H: High, M: Medium, L: Low