

The logo of Galgotias University is a stylized circular emblem composed of several overlapping, curved segments in shades of yellow, orange, and blue, resembling a sun or a globe.

Hazard Assessment, Risk, Mitigation and Preparedness

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Hazard Assessment, Risk, Preparedness and Mitigation

Objectives :

- Conduct hazard identification, hazard assessment and hazard mapping and explain their functions
- Introduction to the concept of risk, preparedness and mitigation

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School of Basic and Applied Sciences

Course Code : MEV313

Course Name: Disaster Management

Secondary Hazard

These are hazards that follow as a result of other hazard events. Hazards secondary to an earthquake may be listed as follows to illustrate the concept. Primary hazard is the earthquake. Secondary hazards are

- Building collapse
- Dam failure
- Fire
- Hazardous material spill
- Interruption of power/ water supply/ communication/ transportation/ waste disposal
- Landslide
- Soil liquefaction
- Tsunami (tidal wave)

Multiple Hazards

When more than one hazard event impacts the same area, there arises a multiple hazard situation. These different hazard events may occur at the same time or may be spaced out in time

Return Period of Hazard

Majority of hazards have return periods on a human time-scale. Examples are five-year flood, fifty-year flood and a hundred year flood.

This reflects a statistical measure of how often a hazard event of a given magnitude and intensity will occur.

Hazard Assessment

“The process of studying the nature of natural /man made hazards determining its essential features(degree of severity, duration, extent of the impact area)and their relationship”.



Vulnerability

Vulnerability is a concept which describes factors or constraints of an economic, social, physical or geographic nature, which reduce the ability to prepare for and cope with the impact of hazards.

Categories of Vulnerability



**Hazard Specific
Vulnerability**



**Setting Specific
Vulnerability**

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Concepts of the Risk and its Analysis

- Risk is a combination of the interaction of hazard, exposure, and vulnerability, which can be represented by the three sides of a triangle.
- If any one of these sides increases, the area of the triangle increases, hence the amount of risk also increases.
- If any one of the sides reduces, the risk reduces. If we can eliminate one side there is no risk.



Three elements of Risk Triangle:

- Hazard
- Vulnerability
- Exposure

Mitigation in Disaster Management

Long term risk reduction measures taken prior to the impact of a disaster to minimize its effects (sometimes referred to as structural and non-structural measures)

Preparedness in Disaster Management

Short term risk reduction measures taken in anticipation of a disaster to ensure that appropriate and effective actions are taken in the aftermath



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References:

1. Arambepola, N.M.S.I. (1999) Multiple Hazard Risks: M1-04, *Natural Disaster Mitigation Course*, CHPB, Sri Lanka.
2. Burton, I. And Kates, R.W. (1964) The perception of natural hazards in resource management, *Natural Resources Journal* 3, 412-41

The logo of Galgotias University is a stylized 'G' composed of three curved, overlapping bands in shades of yellow, blue, and red. Below the logo, the text 'GALGOTIAS UNIVERSITY' is displayed in a large, light grey, serif font, with 'GALGOTIAS' on the top line and 'UNIVERSITY' on the bottom line.

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Thank You !!!

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