

**School of Planning and Architecture, New Delhi**  
*(an Institution of National Importance under an Act of Parliament, Government of India)*

*in collaboration with*

**Building Materials and Technology Promotion Council, New Delhi**  
*(an autonomous body under Ministry of Housing and Urban Affairs, Government of India)*

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**E-Course on**  
**VULNERABILITY ATLAS OF INDIA**

**E-LEARNING PROGRAMME**

**2019**

## **1. Background**

The Indian sub-continent, like many other regions in the world, is vulnerable to a number of natural hazards such as earthquakes, landslides, tsunamis, floods, cyclones, storm surges and thunderstorms. High vulnerability of its physical and socio-economic profile characterize the disaster scenario of the subcontinent which has been, traditionally, facing different types of natural calamities that often turn into disasters, causing high loss of life and property. India has witnessed several disasters leaving a trail of destruction and irreparable loss of lives.

BMTPC has prepared the third edition of the Vulnerability Atlas of India which includes hazard maps of earthquakes, wind, cyclones, floods, landslides, thunderstorms and vulnerability risk tables based on available latest data in order to help in enhancing preparedness of Governments and various other agencies in mitigating natural disasters. The Atlas is a useful tool not only for public but also for urban managers and National and State Authorities dealing with disaster mitigation and management.

Hon'ble Prime Minister of India, released the Third Edition of Vulnerability Atlas of India on the occasion of Global Housing Technology Challenge - India (GHTC-India), Construction Technology India 2019 Expo-cum-Conference on 2<sup>nd</sup> March, 2019 at New Delhi organized by Ministry of Housing & Urban Affairs. Through the Atlas, the State and Union Territory Governments can identify the districts most prone to severe disaster situations and those with multi-hazard situations requiring priority action in future planning, formulating integrated mitigation policies covering Awareness, Education and Training, Preventive and Preparedness Measures, Improvement in Warning Systems, etc. Development projects will need to include mitigation measures against the disaster impacts at the initial plan formulation as well as execution stages so that whatever is developed should not suffer damage later.

## **2. Need for a Training Programme**

In view of the above background, there is an urgent need to bring about a massive awareness amongst professionals working in the area of housing and infrastructure sector, students of Urban and Regional Planning, Civil Engineering, Architectural Colleges, Training of Trainers those who wish to avail themselves with current knowledge of disaster mitigation and preparedness and also individual who wants to keep themselves abreast with the latest and correct knowledge. E-Learning courses provide an enabling platform by virtue of which the students can upgrade their knowledge without going for regular courses. Therefore, there is a need for such e-learning programme in this regard.

This course is a basic e-learning course which will offer awareness about the atlas and the maps and data therein, and how to use them for works in the field of architecture, civil engineering, construction engineering and management, building and materials research, urban and regional planning, housing and infrastructure planning and disaster management.

### **3. Objectives**

The objectives of this e-learning programme are

- a. To orient the public and strategic stakeholders about the content and application of the Vulnerability Atlas of India
- b. To bring about informed safe practices in the field of architecture, civil engineering, construction engineering and management, building and materials research, urban and regional planning, housing and infrastructure planning and disaster management.
- c. Use of Vulnerability Atlas of India for design of buildings, towers, structures, etc., and to identify regions with high vulnerability against various hazards, (viz. earthquakes, cyclones, landslides, floods, etc.) for disaster preparedness mitigation.

### **4. Duration**

E-learning course will help the individuals to learn and move at their own pace. There shall be no fixed duration of the e-learning course.

### **5. Classes**

Since it is an online e-learning programme there shall be no classes.

### **6. Curriculum**

The curriculum shall cover the concept of vulnerability, and the Vulnerability Atlas, understanding geological hazards, vulnerability to wind related hazards, flood hazards, housing vulnerability types and use of the Vulnerability Atlas. The detailed curriculum shall be provided on the website of BMTPC and SPA, New Delhi. Please see Annex-1.

### **7. Venue**

Since it is an online e-learning programme, the course will be available on SPA, New Delhi website [www.spa.ac.in](http://www.spa.ac.in).

## **8. Faculty**

A website for e-learning programme shall be developed by BMTPC and hosted as a sub-domain on its website for the purpose. The e-learning programme shall be launched on SPA's website by giving a specific webpage with weblink to e-learning programme. The course will be mentored by the experts in the area of disaster mitigation and management drawn from SPA, New Delhi and BMTPC New Delhi.

## **9. Target Group Eligibility**

- a. Individuals who wish to keep themselves abreast with knowledge about vulnerability, in order to be better prepared.
- b. Students of Urban and Regional Planning, Civil Engineering and Architectural Colleges including any discipline of engineering/humanities
- c. Training of Trainers (TOT) who wish to gain knowledge of disaster mitigation and preparedness.
- d. Professionals working in the area of housing & infrastructure sector.
- e. Defence personnel, Para Military forces and State Disaster Management Authorities
- f. Central and Local Government Officials
- g. Policy Makers
- h. Consultants
- i. Researchers
- j. NGO Representatives

## **10. Application**

Candidates desirous of taking this course shall have to register online on the website as link available on [www.spa.ac.in](http://www.spa.ac.in).

## **11. Admission**

Admission to the e-course shall be online through the website. As and when candidates registered and apply for the e-course, they shall be asked to fill the Application Form and deposit course fee. After submission of duly filled-in online form, an email will be generated both to Applicant and to Course Coordinator. After verification of the details and receipt of course fee by Course Coordinator in BMTPC/SPA, an email will be sent to Applicant for successful enrolment to the Course and also USER ID (Applicant's ID) and machine generated PASSWORD will be sent. A list shall be made online of the enrolled applicants.

***How to apply:***

Step-1: Select desired course

Step-2: Fill up the prescribed Application form (Annex-2) online

Step-3: Deposit Course fee using Bank Transfer/NEFT/RTGS. Fill in transaction details such as UTR No. and date of payment in the application form.

Step 4: Submit the duly filled in Application form online.

**12. Batch Size**

As this is an e-learning programme, there shall be no batch and candidates can apply for the course 24x7.

**13. Course Fee**

Rs. 3,000/- (Rupees three thousand only) per participant (one time non-refundable fee). Payments to be made using Bank Transfer/NEFT/RTGS only. Sharing of fee on 50:50 basis by SPA New Delhi and BMTPC.

***Bank details for payment of Course fee:***

Account Name	BMTPC
Name of Bank	Canara Bank
Branch Name	Parliament Street Branch
Branch Address	Parliament Street Branch, New Delhi
Type of Account	Savings
Account No.	1098101023050
Bank IFSC Code	CNRB0001098

**14. Teaching Pedagogy**

The teaching pedagogy shall comprise of Course contents to be provided on the website like reading material, link to relevant section of the Vulnerability Atlas, links to additional reference material, MCQ based test for self-assessment and final examination.

**15. Attendance**

There shall be no attendance and candidates can study the course at his own pace.

**16. Examination**

While a continuous MCQ based self-evaluation shall be conducted at the end of every unit of the e-course, an end of course examination shall be held online in order to test the understanding of the candidates on the subject matter. An applicant will get 3 attempts to complete the final evaluation. If the applicant fails after 3 attempts, he/she have to start the course from the beginning.

## **17. Certificate**

On successful completion of the course, a self-generated digital Certificate of Training will be awarded to the participant, citing participation and receipt of awareness and orientation content as defined in the course.

BMTPC and SPA, New Delhi may also jointly organize five yearly contact programmes for enrolled individuals (one at SPA, New Delhi and four other at designated incubation centres of GHTC-I at IIT Bombay, IIT Kharagpur, IIT Madras and IIT Roorkee), who have successfully completed the online course, during which paper certificate will be provided to the applicants.

## **18. Launch Date**

The tentative date of the launch of this course is 15<sup>th</sup> August, 2019.

## **19. Chief Coordinators**

Prof. Dr. P. S. N. Rao, Director, SPA New Delhi

Dr. Shailesh Aggarwal, Executive Director, BMTPC, New Delhi

## **20. Coordination Support**

### **SPA, New Delhi**

- Prof. Dr. Sanjukta Bhaduri, Dean ( Research )
- Prof. Dr. Rabidyuti Biswas, Head, Centre for Analysis and Systems Studies ( CASS )

### **BMTPC, New Delhi**

- Shri D. P. Singh, Development Officer, BMTPC – General, Course contents
- Shri Dalip Kumar, Sr. Field Officer (DC&E), BMTPC – Course contents, website development
- Smt. Anita Kumar, Sr. Programme, BMTPC – Website development and management

## **21. Contact**

[drpsnrao@hotmail.com](mailto:drpsnrao@hotmail.com)

[shailesh.agrawal@gov.in](mailto:shailesh.agrawal@gov.in) / [ska@bmtpc.org](mailto:ska@bmtpc.org)

## CURRICULUM

### **Unit 1: What is Vulnerability Atlas of India?**

- Introduction to the concept of natural hazards and natural disasters,
- Vulnerability profile of India,
- What is Vulnerability Atlas of India?
- Description of Maps and Risk Tables.

### **Unit 2: Earthquake Hazard and vulnerability to housing**

- Earthquakes,
- Past earthquakes,
- Earthquake magnitude and intensity,
- Epicentre of an earthquake,
- Earthquake or Seismic Zones,
- Earthquake Hazard Maps,
- Types of structures or buildings and classification of damage to buildings,
- Effects of earthquakes on housing,
- Earthquake resistant measures for housing.

### **Unit 3: Wind / Cyclone Hazard and vulnerability to housing**

- Wind and cyclonic storms,
- Basic wind speed zones,
- Wind Hazard Maps,
- Cyclone Occurrence Map of coastal India,
- Storm surge,
- Wind/cyclone resistant measures.

### **Unit 4: Flood Hazard and vulnerability to housing**

- Floods,
- Flood prone areas in the country,
- Flood Hazard Maps,
- Probable maximum precipitation,

### **Unit 5: Landslides, Thunderstorm and Tsunami Hazards**

- Landslides and different types of landslides and failure mechanism prevalent in India,
- Landslide Incidence Maps,
- Thunderstorms,
- Thunderstorm Incidence Map,
- Tsunami and Tsunami velocities.

**Unit 6: Housing Vulnerability Risk Table**

- House types,
- Damage risk to housing under various hazard intensities,
- Risk of damage to house types,
- Damage risk levels for earthquakes, wind storms and floods,
- Probable maximum precipitation.

**Unit 7: How to Access Vulnerability Atlas of India and Definition of Disaster Related Terms**

- How to Access Vulnerability Atlas of India
- Definition of Disaster Related Terms,



# APPICATION FORM

## Online Course on Vulnerability Atlas of India – for Beginners

1. NAME OF THE APPLICANT: (First Name)   
(Last Name)

2. DATE OF BIRTH :

3. GENDER:  MALE  FEMALE

4. QUALIFICATION:  UNDERGRADUATE  GRADUATE  POST GRADUATE

5. E-Mail ID :

6. MOBILE NO.

7. COURSE FEE DETAILS:

Bank Name	<input type="text"/>
UTR No.	<input type="text"/>
Date	<input type="text"/>
Amount paid	<input type="text"/>

8. UPLOAD APPLICANT'S PHOTO:  (in .jpg format)

I hereby declare that all the statements made in this application is true to the best of my knowledge and belief.

**SUBMIT APPLICATION FORM**

Note: After submission of online form, an email will be generated. After verification of the details and receipt of course fee by Course Coordinator in BMTPC/SPA, an email will be sent to Applicant for successful enrolment to the Course and provide the applicants with USER ID and machine generated PASSWORD.

## Additional Information (PROFILE)

1. FATHER'S NAME:

2. MOTHER'S NAME:

3. CORRESPONDENCE ADDRESS:

City

Country

Pin Code

4. CURRENT OCCUPATION:

Job Title

Organization

Location