



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Textile Technology
Choice Based Credit System (CBCS) in Light of NEP-2020
Generic Elective for UG Courses
(2021-2025)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTTX905	GE	GEOTEXTILES	60	20	20	-	-	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit.

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

1. To understand the emerging trends of Geosynthetic in Geotechnical Engineering
2. To evaluate the different properties of including different tests
3. To analyze the functions of geosynthetic and its suitability
4. To design different structures using geosynthetics according to various applications

Course Outcomes (COs):

The students will be able to

1. Identify the type of geosynthetics and their relevance in geotechnical field
2. Understand the mechanism of formation of different geosynthetics
3. Analyse and compute different properties of geosynthetics
4. Apply the knowledge for designing the structures using Geosynthetic materials.

Syllabus

Unit I Introduction

8HRS

Defination of Geotextile, Classification of Getextiles, woven geotextiles, nonwoven geotextiles,Knitted geotextiles and stitch bonded geotextiles.
Type of fibres used in geotextiles.

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- Unit II Properties of Geotextiles** **9HRS**
Physical Properties: Mass per unit area , Thickness , Specific gravity
Hydraulic properties: Apparent open size, Permittivity, Transmissivity, Effective opening size test(Sieve test)
Mechanical Properties : Uniaxial Tensile Strength , Burst and Puncture Strength (Cone drop test)
- Unit III Geosynthetics** **7HRS**
Defination of geosynthetics, Classification of geosynthetics, geotextiles , geogrids, geonets , geomembranes , geocomposites, Geojute, Geomembrane, Geogrid, etc.
- Unit-IV Functions of Geosynthetic material** **8HRS**
Functions of Geotextiles, separation, reinforcement, filtration, drainage (or fluid transmission), fluid barrier.
- Unit-V Application of geotextiles** **10HRS**
Use of geosynthetics in roads, Use of geosynthetics in rail roads, Use of reinforced soil in Retaining walls,Improvement of bearing capacity,Geosynthetics in environmental control and land fills,Ground Improvement by geodrains, Use of Geosynthetics in lining of canals

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Text Books:

01. Design with Geosynthetics, R. M. Korner, Prentice Hall, New Jersey, 3rd Edn. 2002
02. Engineering with Geotextiles, G. V. Rao and G. V. S. Rao, Tata McGraw Hill
03. Physical and Geotechnical Properties of Soils', J.E. Bowles 2nd Edition, Mc. Graw Hill, New York.
04. Geo-textiles and Geo-membranes in Civil Engineering,. Gerard P.T.M. Van Santvrot A. A. Balkema, Oxford and IBH publishing company, New Delhi.
05. Geosynthetics World. – J. N. Mandal, Willey Eastern Limited, New Delhi.
06. P. Purushothama Raj, Ground Improvement Techniques, Tata McGrawHill, New Delhi, 1995.
07. T. S. Ingold and K. S. Miller, Geotextile Hand Book, Thomas Telford, London.

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