SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

COURSE NAME : **19MC003 ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE**

III YEAR / VI SEMESTER

Unit V- Traditional Knowledge in Different Sectors

Topic 1 : Traditional knowledge and engineering

Introduction

Definition of Traditional Knowledge
•Passed down through generations
•Deeply connected to culture, environment, and community

Definition of Engineering
•Application of science and technology to solve practical problems
•Focus on innovation and development

Key Concepts

Traditional Knowledge:
- Agriculture, medicine, architecture, water management, etc.
- Contextual and holistic approach

Engineering:
- Technological and systematic approach
- Aimed at solving complex, large-scale problems

Intersection of Traditional Knowledge and Engineering

Sustainable Design and Construction
•Use of natural materials (e.g., mud, stone, bamboo)
•Eco-friendly and energy-efficient methods

Environmental Stewardship
•Traditional ecological knowledge (e.g., sustainable farming practices)
•Contribution to modern environmental management

Resilient Infrastructure
•Earthquake-resistant techniques (e.g., Japanese homes)
•Flood-resistant homes in Southeast Asia

Water and Waste Management
•Rainwater harvesting and terracing
•Eco-friendly waste disposal and composting techniques

Examples of Integration

Bamboo Engineering
•Lightweight, strong, and sustainable material
•Used in modern construction due to its growth cycle and strength-to-weight ratio

Traditional Earthquake-Resilient Homes in Nepal
•Study of indigenous techniques for modern earthquake-resistant architecture

Greenhouse Effect and Passive Cooling
•Traditional designs of greenhouses adapted to modern, energy-efficient structures

Challenges in Integration

Intellectual Property
•Ensuring the proper recognition of indigenous knowledge
Cultural Sensitivity
•Respecting cultural contexts when using traditional knowledge

Technological Disparities
•Overcoming gaps between low-tech traditional methods and high-tech engineering solutions

Benefits of Integration

Sustainability
•Eco-friendly, low-impact designs that honor the environment
Resilience
•Designing systems and structures that are more durable in the face of natural disasters

Holistic Solutions
•Addressing global challenges with both modern technology and traditional wisdom

Case Study: Sustainable Architecture

Example: Traditional mud and stone homes

•Focus on passive solar design, natural cooling, and insulating properties
Engineering Adaptation:
•Modern techniques enhancing the structural stability and energy efficiency of these designs

Any Query????

Thank you……