

**INDIVIDUAL COURSE DETAILS**

**Advanced Certificate Course on  
“Design of Educational Applications using Web Technologies”**

A. Name of the Institute	<b>NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH</b> TARAMANI, CHENNAI – 600 113. INDIA [An Autonomous Institute under Ministry of Human Resource Development, Government of India]
B. Name / Title of the Course	<p style="text-align: center;"><b>Advanced Certificate Course on “Design of Educational Applications using Web Technologies”</b></p>
C. Course Dates with Duration in Weeks	<p style="text-align: center;"><b>16.11.2022 To 13.12.2022 (4 Weeks)</b></p>
C1. Mode of Course	<p style="text-align: center;"><b>Offline / Online</b></p>
D. Eligibility Criteria for Participants  1. Educational Qualification  2. Work Experience required, if any  3. Age Limit  4. Target Group	Applicants for this course must be  Information Technology (IT) Teachers / IT professionals/ Programmers and ICT Trainers  <ul style="list-style-type: none"> <li>• Minimum of two years experience in teaching / IT / Networking / ICT application design, Development and Training</li> <li>• Have a good proficiency in English which is the medium of instruction</li> </ul> Preferably not more than 45 years  Computer Science and Information Technology professionals

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<p>E. Aims &amp; Objectives of the Course</p>	<p>To develop appropriate and necessary competencies in Web Technologies, XML Technologies and Cloud computing Technologies</p> <ul style="list-style-type: none"> <li>• Understand the emerging Information technologies in Internet world</li> <li>• Implement client side programming using java script and CSS</li> <li>• To practice the database technologies with Open Source RDBMS</li> <li>• Implement server side programming using Server Technologies with Framework</li> <li>• To understand the use of web services in web environment</li> <li>• Design the Teaching and Training applications using FOSS tools</li> <li>• Design exclusive assessment and assignment tools using FOSS</li> <li>• Install and configure Open Source Learning Management System.</li> </ul>
<p>F. Course Contents / Syllabus</p>	<p>Internet technologies - overview –HTML tags – XHTML - CSS – JavaScript – Server Script – Web Server - Content Management System - Joomla</p> <p>Database Technologies – MySQL – Design of Database - Normalization</p> <p>Introduction to XML – DTD –Schema – SAX / DOM Parser – XSLT – Xquery / XPath - Introduction to Web Services – Web Service Development</p> <p>Design of Assessment tool – Hotpotatoes – Mind map tools – eXeLearning.net – Collaboration tools</p> <p>Introduction to Cloud Computing - Cloud computing vs. Cluster computing - Software as a Service(PaaS) - Cloud Security- Infrastructure Security - Data security and</p>

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	Storage - Access Control
G. Mode of Evaluation of Performance of the Participants	<p>Attainment of course objectives will be periodically reviewed by course review, internal assessment and project work.</p> <p>At the end of the course, candidates will be awarded with an Advanced Certificate on <b>“Advanced Certificate Course on “Design of Educational Applications using Web Technologies”</b></p>
H. Name of the Department	Department of Computer Science and Engineering
I. Name of the Coordinator	Dr. V.Shanmuganeethi
J. Resource Persons	Dr. P. Malliga Guest Faculty members from IIT, Anna University, D-DAC, NIC

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**Preamble**

The internet is a primary communication tool for individuals, communities, educational societies, organizations and corporations. The current advancement in technology, the growth of the e-business and the increased popularity of the internet and World Wide Web has all made web technologies an important in the world. Web technologies are the base for cloud computing. Cloud computing is everywhere. Cloud computing is the delivery of computing services over the Internet. Cloud services allow individuals and businesses to use software and hardware that are managed by third parties at remote locations. Examples of cloud services include online file storage, social networking sites, webmail, and online business applications. The cloud computing model allows access to information and computer resources from anywhere that a network connection is available. Cloud computing provides a shared pool of resources, including data storage space, networks, computer processing power, and specialized corporate and user applications.

This programme covers the emerging technologies in the web environment and cloud computing services and technologies.

**Objectives of the Programme**

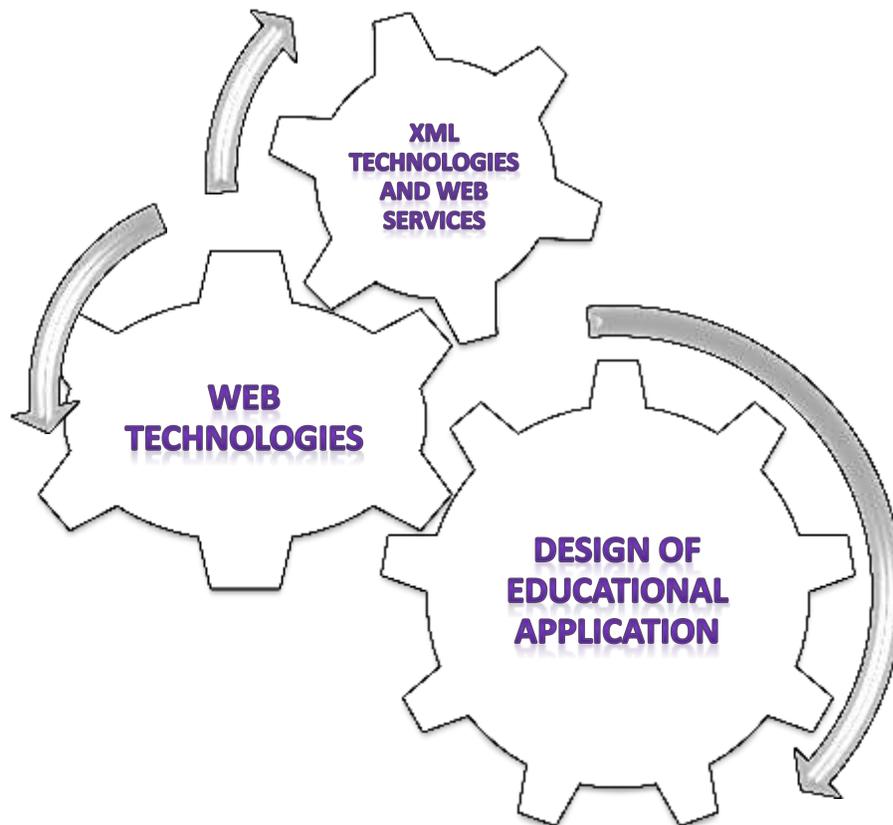
- Understand the emerging Information technologies in Internet world
- Implement client side programming using java script and CSS
- To practice the database technologies with Open Source RDBMS
- Implement server side programming using Server Technologies with Framework
- To understand the use of web services in web environment
- Design the Teaching and Training applications using FOSS tools
- Design exclusive assessment and assignment tools using FOSS
- Install and configure Open Source Learning Management System.
- To understand the cloud computing concepts for Education

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### Course Content

**Module – 1:** Internet technologies - overview –HTML tags – XHTML - CSS – JavaScript – Server Script – Web Server - Content Management System – Joomla

**Module – 2:** Database Technologies – MySQL – Design of Database - Normalization



**Module – 3:** Introduction to XML – DTD –Schema – SAX / DOM Parser – XSLT – Xquery / XPath - Introduction to Web Services –Web Service Development

**Module – 4:** Design of Assessment tool – Hotpotatoes – Mind map tools – eXeLearning.net – Collaboration tools

**Module – 5:** Introduction to Cloud Computing - Cloud computing vs. Cluster computing - Software as a Service(PaaS) - Cloud Security- Infrastructure Security - Data security and Storage - Access Control

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**Assessment and Award**

Attainment of course objectives will be periodically reviewed by internal assessment and project work.

**Successful candidates will be awarded “Advanced Certificate course on “Design of Educational Applications using Web Technologies ”.**