

EduNet Techsaksham

(Deep Engagement Model)(160 Hours)

[Women students only Final Year Students from B.Tech - CS, IT, Electronics or allied (80% students) + B.Sc/M.Sc from computer background and BCA/MCA students (20% students)]

Instructor led hands-on sessions technical
(100 Hours) + Hands-on Project Work (40 Hours) + Employability Skills (20 Hours)

Coures Name	Topics covered	Description	Duratio n
1)Artificial Intelligence	The 4th industrial revolution and the key technologies in demand	<ul style="list-style-type: none">• Introduction to AI and understanding different AI terminologies• Understanding the evolution of AI and the AI winter cycle• The AI applications transforming various industries• Current AI market trends and opportunities• Chatbot fundamentals• Responsive & Conversational AI	7
	Fundamentals of open-source Tools & Technology	<ul style="list-style-type: none">• Introduction to Data Analytics, its types and working with Anaconda tools• Working with Python programming language and its core libraries• Understanding advanced data types and data structures in Python	8
	Data analysis with python to fuel AI applications	<ul style="list-style-type: none">• Data Science vs Data Analysis vs Data Analytics• Working with python for data science• Python packages for data analytics applications<ul style="list-style-type: none">o NumPyo Matplotlibo Pandas• Understating web scraping for data gathering• Connecting SQL databases and performing crud operations using Python	15
	Exploring and implementation of popular Machine Learning Algorithms with Python & open-source libraries like Scikit-learn	<ul style="list-style-type: none">• Introduction to machine learning and classification of Machine learning techniques• Understanding Supervised, Unsupervised, semi-supervised and reinforced machine learning algorithms• Implementing Machine Learning algorithms with Python packages and libraries• Azure ML Studio for designing & training models• Machine learning use cases	25

	Developing Deep Learning Implementations with open-source deep learning frameworks like TensorFlow & Keras	<ul style="list-style-type: none"> • Introduction to Artificial Neural Networks (ANN), Deep Neural Networks (DNN) and Deep Learning (DL) • Understanding how DL helps solve classical Machine Learning limitations • Implementation of deep learning networks like CNN with TensorFlow • Deep Learning use cases 	25
2)Cloud Computing	Moving Ahead with Cloud	<ul style="list-style-type: none"> • What is Cloud Computing? Why Cloud Computing? Cloud Key Terminologies • Characteristics of Cloud Computing • Advantages of using cloud computing over on-premises infrastructure • Cloud Deployment Model • Cloud Service Delivery Model • Cloud Global Infrastructures 	10
	Insights into Azure Cloud Environment	<ul style="list-style-type: none"> • Cloud Core Services • Compute Services- Virtual Machine • Storage Services • Networking Services- VNET, Subnetting • Security & Monitoring Services 	20
	Azure Database Services	<ul style="list-style-type: none"> • SQL Databases and its operations • Azure MYSQL Server • Mem-cache in database instances • NoSQL Database in Azure - CosmosDB 	15
	Azure Cognitive Services and Analytics Services	<ul style="list-style-type: none"> • Language & Speech APIs • Custom Vision API • Azure Analytics and Integration with Power BI tool 	15
	Building web applications with Azure	<ul style="list-style-type: none"> • Azure App Services • Serverless Compute- Functions • Containerized App development using container services • DevOps services in Azure • Azure Monitor 	25

3)Full Stack Web Development	Building Front Face for Web	<ul style="list-style-type: none"> • Understanding the WEB o Internet, Web page, Website, Web applications • HTML for web Layout o HTML Basic Components, List, Tables, Graphics, MultiMedia, Forms, Text formatting, Block components • CSS for Page Design o CSS design principles, property:values, dynamic CSS3, box model, design layout controls • JS for Client-side scripting o Handling HTML Events, Animations, Reading element state & data, form handling and validations. Handling Cookies and Session Data • Building Dynamic web pages using HTML 5, CSS3 and JS o Understanding and using Bootstrap CSS & JS, using Bootstrap Components for quick design o Create a dynamic website/application using html-5, css3 and JS with Bootstrap component 	12
	Handling the web data at backend	<ul style="list-style-type: none"> • Revisiting Java Object Oriented Paradigms o Understanding OOP concepts through core Java o Core Java Annotations • Understanding Server-Side Scripting o Why server side? How we do it? Server-side handling benefits • Introduction to Servlets and JSP o Syntax, semantics, servlet lifecycle, pre-defined objects and tags for JSP • Handling Client-side data o Reading HTML form data, handling data at backend, Projecting responses to front end • Managing Sessions at Server and Cookies at Client o Creating sessions, session data, reading and writing cookies at client side o Introduction to EL(expression language) and JSTL(java standard tag library) 	24
	Connecting End-to-End	<ul style="list-style-type: none"> • Introduction to relational databases- MySQL o Introducing relational databases, need for database, persistent storage benefits, MySQL basics, commands • Handling databases using core JAVA o CRUD operations using SQL, DDL and DML o Creating DAO (database access objects) • Managing data in databases using JSP & Servlet o Connecting to MySQL DB, performing CRUD operations using, persistent storage of front-end data to MySQL DBo Handling NoSQL database- MongoDB 	18

	Modern web development using ReactJS	<ul style="list-style-type: none"> • Introduction to ReactJS <ul style="list-style-type: none"> o Basics of ReactJS framework, develop using React components and single page applications • Building React Native Application from Scratch <ul style="list-style-type: none"> o Creating UI using React Native o Creating Business Logic using J2EE o Creating Database Connectivity 	12
	Web Development using Spring Framework	<ul style="list-style-type: none"> • Understanding MVC <ul style="list-style-type: none"> o Maven Projects & Dependencies (pom.xml) o Working with annotations o Database CRUD operations using DB classes • Integrating web template UI with Spring <ul style="list-style-type: none"> o Creating responsive UI using Bootstrap o Integrating Spring with all CRUD operations 	14
Employability Skills (20 Hours)	Know yourself	<ul style="list-style-type: none"> • SWOT Analysis • Self-introduction 	1
	Resume Building & LinkedIn Profiling	<ul style="list-style-type: none"> • Resume Writing, format, and layouts • LinkedIn profiling and Creating a Profile 	3
	Building Blocks	<ul style="list-style-type: none"> • Agile mindset • Time Management • Goal Setting • Ethics and Integrity • Stress Management & resilience • Adaptability • Teamwork and Interpersonal Skills 	4
	Professional Writing	<ul style="list-style-type: none"> • Formal & informal • Letter, report, and email writing 	2
	Creative thinking	<ul style="list-style-type: none"> • Mind Mapping • Rebus Puzzles / Problem Solving • Structured and Unstructured Ideas • Analytic and Research Skills 	2
	Public speaking	<ul style="list-style-type: none"> • Debates • Group discussions 	3
	Being job ready - Professionalism	<ul style="list-style-type: none"> • Environment • Ethics and values • Dress code • Essential skills 	2
	Essential Interview skills	<ul style="list-style-type: none"> • Aspects in an interview • Offline and online interviews • Dress code • Etiquette 	2
	Aptitude & Logical Reasoning	<ul style="list-style-type: none"> • Types of questions • Ways to practice 	2
	Digital Footprint	<ul style="list-style-type: none"> • Online Literacy • Effective Use of social media 	1
Mock Interviews	Practical	4	

Faculty Development Program(FDP) (30 Hours)

Coures Name	Topics covered	Description	Duratio n
Artificial Intelligence	Building Future with Artificial Intelligence	<ul style="list-style-type: none"> • Artificial Intelligence- The Advent & Ascent • Breakthrough AI Application- Demo • NO CODE ML- Working on Microsoft Lobe • Jump Start- Data Exploration & Analytical Modelling 	6
	Building Machine Learning Models	<ul style="list-style-type: none"> • Regression Case Study <ul style="list-style-type: none"> o Working with Continuous Variable Outputs • Classification Use Cases <ul style="list-style-type: none"> o Working with Discrete Variable Outputs 	6
	Computer Vision using Deep Neural Nets	<ul style="list-style-type: none"> • Vision Use Cases- Demo • Convolutional Neural Networks • CNN for Healthcare, a case study 	6
	Natural Language Understanding	<ul style="list-style-type: none"> • NLP Use cases- Demos • Detecting Emotional State and Generating Inferences • NLP for Text Summarization 	6
	Using Cloud tools for building AI solutions	<ul style="list-style-type: none"> • Getting started with Azure ML Studio • Build your own model- tune, test and deploy • Deployment skills- Streamlit Framework and Cloud VM Hosting 	6
Cloud Computing	The Future is Cloudy	<ul style="list-style-type: none"> • Understating Cloud Computing • Industrial Shift- What benefits we get • Cloud Deployment and Service Models • Creating Virtual Machine Servers for Application Hosting 	6
	Working with Cloud IaaS	<ul style="list-style-type: none"> • Cloud Security Use Cases • Building Secure Infrastructure from Scratch • Case Study- Auto Scaling and High Availability • Building Scalable Infrastructure for Application Hosting 	6
	Cloud For Application Development	<ul style="list-style-type: none"> • Cloud Native Applications • Azure App Services • Serverless Compute- Function APIs 	6
	Containerized Applications and Microservices	<ul style="list-style-type: none"> • Understanding Microservices Architecture • Working with Docker and Kubernetes 	6

		<ul style="list-style-type: none"> • Hosting with Azure Container Services 	
	Cognitive Services in Azure	<ul style="list-style-type: none"> • Understanding Cognitive Applications- Demos • Use Cases for AI applications <ul style="list-style-type: none"> o Who AM I? o I don't speak your language! • Azure Vision Services • Azure NLP Services 	6
Full Stack Web Development	Building Responsive and Interactive UI using Bootstrap	<ul style="list-style-type: none"> • Working with Bootstrapping • Integration of JQuery • Creating web template using Bootstrap and JQuery 	6
	Working with Servlets and JSP	<ul style="list-style-type: none"> • Servlet Lifecycle & Pre-Defined Objects • JSP tags and Form operations • Session and Cookies handling 	6
	Working with Databases	<ul style="list-style-type: none"> • Working with SQL database • Working with NoSQL database • Database connectivity and operations 	6
	Framework for web Applications	<ul style="list-style-type: none"> • Intro to annotations and Spring • DAO, Maven projects & configurations • Database handling using Spring Framework 	6
	Creating dynamic web application using Spring	<ul style="list-style-type: none"> • Integration of UI template • Building business logic • Database connectivity, filter queries 	6