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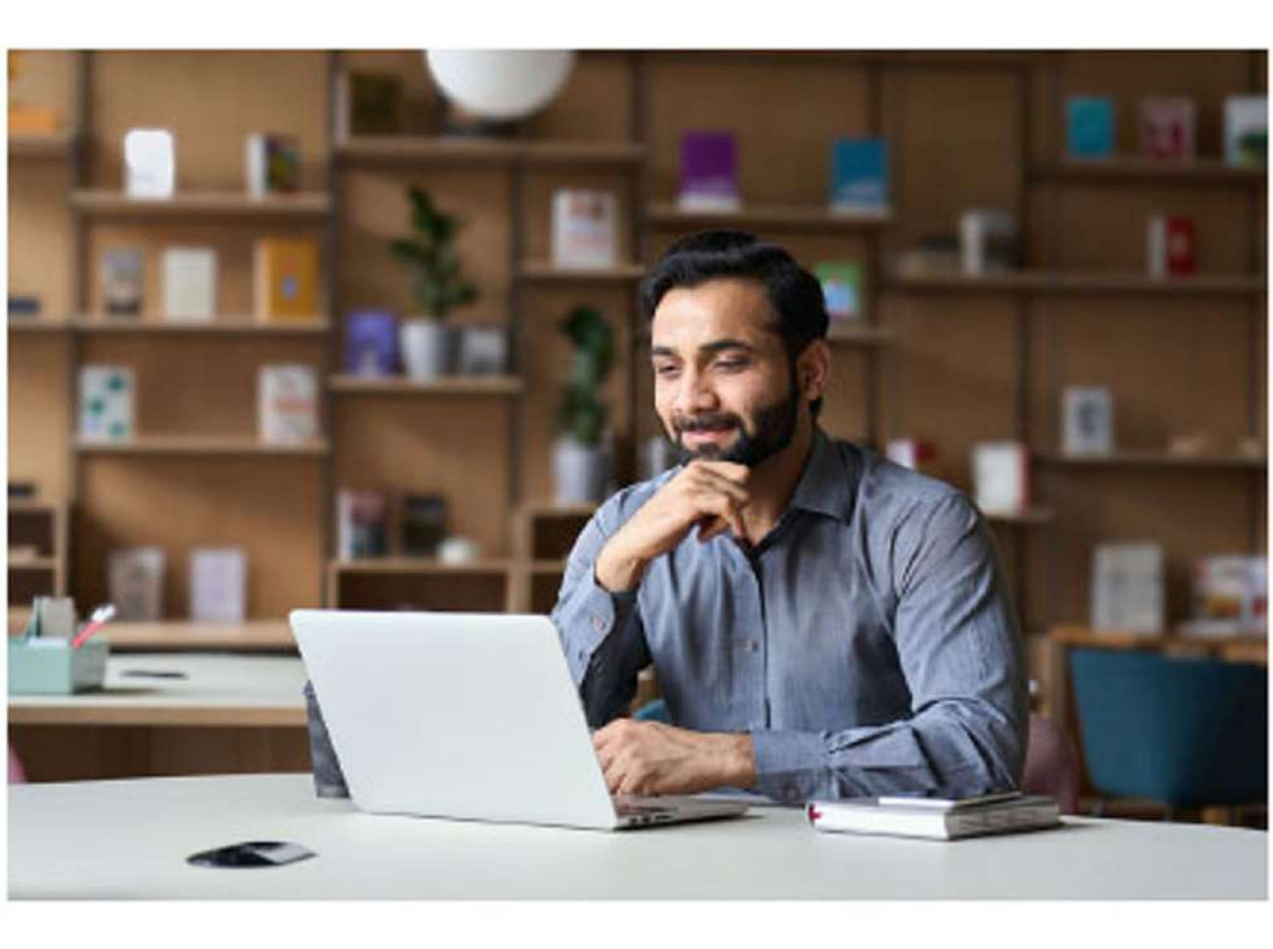
Launch your career here at

Knowledge Streams



Who We Are

We provide technical and soft skills trainings through an immersive boot camp to help young university graduates meet the needs of the IT Industry. The bootcamp, one-third of which is focused on soft skill development, including communication, emotional intelligence, project management. It is a journey of uncovering what is already there: building the confidence of this talent to address problems with the knowledge and tools that they have.

Our Vision

To become the provider of choice of trained professionals for the IT industry in Pakistan. Knowledge Streams aims to bridge the talent – employment gap in the IT sector at scale, with speed, and quality, exceeding international standards.

Value Propositions

INNOVATION

Training manpower for the IT Industry, thereby significantly reducing involvement of a company's space, time and senior resources allocated for trainings.

DEDICATION

Industry-experienced instructors, relevance and efficacy of an industry-driven curriculum with execution at speed and scale, ensuring success

GROWTH

Social impact through a leveling of the playing field for women and the underprivileged

Environment & Service Offerings

DedicatedCorporate Training Facility

- Technical sessions with Hands-on training in workspaces having computer workstation clusters to facilitate group learning.
- Trainees expected to follow norms of appearance, manners, interactions, as expected in a corporate facility.
- Detailed multidimensional assessment of trainee performance will be available

12 Week Face-to-Face Programs

The Curriculum consists of three modules:

- **Module-1 (Software Engineering Fundamentals):** Builds a common baseline among those coming from different IT backgrounds/programs. ·
- **Modules-2 (Technical Stream):** Builds technical skills in a specific area, such as MERN, .NET, Python/DJANGO, etc. Soft skills development in core areas of communication, leadership and teamwork ·
- **Module-3 (Soft Skills):** Runs concurrently with Modules 1, 2 and focuses on building professionalism of trainees as applicable to the IT industry in particular

Final Capstone Project

- Final capstone project, chosen in consultation with the industry

Outcomes

High quality, trained manpower for the IT industry allowing the sector to significantly expand its local and global presence, while providing opportunities for the talented youth to develop and prosper.

Meet Our Team

Professor Dr. S. Sohail H. Naqvi
Co-founder and CEO

Dr. Naqvi recently completed his term of founding Rector of the University of CentralAsia, that he had joined in Aug. 2018 upon completion of five-years as VC of LUMS where he had spearheaded the transition of this prestigious, primarily undergraduate, institution into the top ranked research universities of the country. Prior to LUMS he was the Executive Director of the HEC for eight years, where he oversaw implementation of an ambitious portfolio of programs. In 2016 he was awarded the Sitar-e-Imtiaz by the Government of Pakistan for his services to higher education and in 2022 he was awarded the "Best of Education" award by the Ministry of Education and Science of the Kyravz Republic. In 2022 he was also given the lifetime achievement award by the Pakistan Engineering Council.

Professor Dr. Naveed A. Malik
Senior Advisor

Dr. Naveed Malik is Senior Advisor at Knowledge Streams, having joined it on the day that it was established. Prior to that he was the founding Rector of the Virtual University of Pakistan where he served from 2001-2019. Dr. Malik obtained his Doctor of Science degree from M.I.T. in the field of Electrical Engineering and Computer Science specializing in Digital Signal Processing. He is a life member of the Pakistan Institute of Physics and in 2008 was conferred the Pakistan Civil Award of Sitara-e-Imtiaz for services to education. He was awarded the title of Honorary Fellow by the Commonwealth of Learning in 2016.

Komal Masood
Assistant Vice President
Learning & Development

Komal is an experienced professional with expertise in managing large-scale and complex projects in legal, financial, and education domains. Beginning her career in 2007 at Techlogix, Komal refined her expertise in Training & Skills development before transitioning to business analysis and project management. Her critical thinking skills and commitment to precision & excellence have been essential in solving complex problems and delivering successful projects. Komal's passion f or growth and development is reflected in her implementation of training programs, where she aims to foster individual and organizational growth.

Dr. M. Fareed Zaffar
Advisor

Dr. Fareed is Advisor at Knowledge Streams during his sabbatical from LUMS, where he is an Associate Professor of Computer Science. He received his Ph.D. in Computer Science from Duke University in 2005 and the BSc. (Hons) degree from LUMS with a major in Computer Science and minor in Mathematics in 1999. His primary research interests are in the areas of security, privacy and Internet measurement. His recent work focuses on social networks, online fraud and cybercrime and his previous work looked at enabling public sector reform through technology and the use of information and communication technologies for development.

Courses Offered

- Java Core
- Java Spring
- Python and
- Django Web Development
- PHP
- MEAN
- REACT
- NodeJS
- Angular
- Data Science and ML
- Artificial Intelligence and ML
- Cyber Security

Java Core

Java is one of the most popular programming languages in the world, used for building a wide range of applications, from simple desktop programs to complex enterprise-level systems.

In this course, you'll learn the fundamentals of Java programming, including object-oriented programming concepts, file handling, data structures, concurrency, graphical user interfaces, database connectivity, and popular Java frameworks like Spring and Hibernate.

Modules :

1.Java Basics
2.OOP Basics
3.File Handling and Data Structures
4.Concurrency
5.GUI
6.Database Connection
7.Java Spring
8.JVM tuning, garbage collection algorithms
9.Final Project

Learning Outcomes:

- Understand programming concepts like variables, data types, control structures, and object-oriented programming principles
- Develop Java programs using an IDE
- Use file input/output operations and data structures like lists, sets, and maps
- Understand concurrency concepts and networking protocols like sockets, URLs & HTTP
- Create graphical user interfaces using JavaFX or Swing
- Understand Java Database Connectivity (JDBC) and build web applications using Java Servlets and JavaServer Pages (JSP)
- Use popular Java frameworks like Spring and Hibernate to build enterprise-level applications
- Apply advanced topics like JVM tuning and garbage collection algorithms to optimize Java programs

Java Spring

This course provides students with the knowledge and skills to build robust and scalable enterprise-level applications using one of the most popular Java frameworks, Spring.

Throughout the course, students will learn how to develop web applications, create RESTful APIs, handle data access using Spring Data, and manage transactions using Spring Transaction Management. The course covers configuring Spring using XML, annotations, and Java-based configurations, as well as using Spring Security to implement authentication and authorization in applications.

Modules :

1.Java Basics
2.Arrays and OOP
3.File Handling and Data Structures
4.Java Spring
5.MVC
6.Database Connection
7.Authentication
8.Advanced Topics
9.Final Project

Learning Outcomes:

- Develop Java programs using fundamental language features such as variables, data types, and control structures
- Implement object-oriented programming concepts such as classes, objects, methods, encapsulation, and inheritance
- Handle exceptions and work with arrays and data structures
- Use Spring Framework for building enterprise-level Java applications
- Build basic Spring applications with Inversion of Control (IoC), Dependency Injection (DI), and Aspect-Oriented Programming (AOP)
- Implement the Model-View-Controller (MVC) design pattern with Spring MVC for building web applications
- Work with Spring Data to handle database connectivity with JPA and Hibernate
- Implement Spring Security to provide authentication, authorization, and encryption for applications

Python & Django Web Development

This course is designed to teach learners how to develop web applications using the Python programming language and the Django web framework.

Throughout this course, learners will be introduced to the fundamentals of Python programming, including how to create and manipulate data structures, work with functions and modules, and write object-oriented code. They will also learn how to use Django to build dynamic web applications that interact with databases, handle user authentication and authorization, and process form data.

Modules :

1.Python Overview
2.Introduction to Django
3.Django Models
4.JDjango Forms and Views
5.Django Templates
6.Django Authentication
7.Django REST Framework
8.Django Deployment and Final Project

Learning Outcomes:

- Understand the basics of Python programming language
- Utilize control structures and loops in Python
- Create functions and modules in Python
- Build a web application using Django
- Use Django's MVC architecture to structure a web application
- Define models and relationships between them in Django
- Use Django forms to handle user input
- Customize Django's authentication and authorization system
- Build RESTful APIs using Django REST Framework
- Deploy a Django application to a web server
- Use Docker to manage a Django application
- Develop a full-stack web application from scratch using Django
- Implement features such as user authentication and authorization in a Django application

PHP

PHP is a popular server-side scripting language used for web development.

Throughout the course, students will learn the fundamentals of PHP programming, including variables, data types, control structures, and functions. They will also learn to work with HTML forms, cookies, and sessions to build dynamic web applications.In addition to the core PHP programming concepts, the course will also cover popular PHP frameworks, including Laravel and Symfony, as well as the popular database management system MySQL.

Modules :

1.PHP Basics
2.Arrays, Functions, Strings
3.Object-Oriented Programming and Web Fundamentals
4.Databases and SQL
5.PHP Frameworks
6.Advanced Web Development Concepts
7.Authentication and User Management
8.Deployment, Testing, and Final Project

Learning Outcomes:

- Understand the fundamentals of PHP programming language and basic concepts such as variables, data types, operators, and control structures
- Learn how to work with arrays, functions, and strings in PHP and manipulate files using file input/output
- Gain knowledge about Object-Oriented Programming concepts including classes, objects, methods, encapsulation, and inheritance
- Develop an understanding of PHP web fundamentals and working with databases using SQL and MySQL
- Learn about popular PHP frameworks such as Laravel or Symfony and develop web applications using these frameworks
- Get familiar with advanced web development concepts such as MVC architecture, routing, middleware, and templating engines

MEAN

MEAN stack is a popular full-stack development technology that enables developers to build robust web applications using four powerful technologies: MongoDB, ExpressJS, AngularJS, and NodeJS.

This comprehensive course covers the essential topics required to become proficient in MEAN stack development, starting from the basics of JavaScript and NodeJS to advanced concepts such as building RESTful APIs, using Angular for building dynamic web pages, and integrating the application with MongoDB, a NoSQL database.

Modules :

1.Introduction to MEAN stack
2.MongoDB and RESTful APIs
3.Express Framework
4.Angular Framework
5.Advanced Angular Concepts
6.Authentication and Authorization
7.Deployment and Optimization
8.Advanced Topics and Final Project

Learning Outcomes:

- Understand the basics of MEAN stack development and how to set up the development environment.
- Gain proficiency in MongoDB, including CRUD operations, data modeling with Mongoose, and building RESTful APIs with Node.js and MongoDB.
- Learn about the Express framework and its routing and middleware capabilities, and how to build web applications with Express and MongoDB.
- Master the Angular framework, including building components, templates, and services, data binding, and event handling, and how to build a basic Angular application with Express and MongoDB backend.
- Acquire knowledge of advanced Angular concepts such as Reactive programming, Observables, and RxJS, and how to build a real-time web application with Angular and Socket.io.

REACT

This course is designed to introduce learners to the fundamentals of React development, including the basics of JSX syntax, component-based architecture, state and props management, and event handling.

Trainees will also learn how to work with popular React libraries such as React Router for client-side routing and Redux for state management. Throughout the course, they will build a series of projects that will allow them to apply the skills of building a multi-page application with React Router, creating a shopping cart using Redux, and building a real-time chat application using Firebase and React.

Modules :

1.Introduction to React
2.React Props and State
3.Forms and Hooks
4.React Router
5.Redux
6.Connecting Redux with React
7.Advanced topics in React
8.Deployment and Performance Optimization
9.Final Project

Learning Outcomes:

- Understanding of the history and features of React.
- Ability to set up the development environment and use JSX syntax and components to build basic React components and applications.
- Understanding of React Props and State, including conditional rendering, lists and keys, and event handling.
- Ability to handle user input with forms, work with Component Lifecycle methods and use React Hooks.
- Familiarity with React Router for dynamic routing and navigation.
- Understanding of Redux for state management and data flow, including actions and reducers.
- Ability to connect Redux with React using Containers and Presentational components, the Redux store, and Provider.

NodeJS

The Node.js course is designed to provide learners with a comprehensive understanding of server-side JavaScript development using Node.js.

The course is divided into several modules, starting with an introduction to Node.js and its features. Learners will then move on to more advanced topics such as building web applications with Node.js and Express, working with databases using MongoDB, and creating RESTful APIs. The course also covers topics such as authentication, authorization, and security, and provides learners with the skills they need to deploy and maintain Node.js applications.

Modules :

1.Introduction to Node.js and JavaScript runtime environment
2.Node.js Modules and Asynchronous Programming
3.Building Web Applications with Express
4.Working with Databases in Node.js
5.Authentication and Authorization in Node.js
6.Real-time Communication with Socket.io
7.Java Spring
8.Deployment and Performance Optimization in Node.js
9.Advanced Topics and Final Project

Learning Outcomes:

- Understand the history and features of Node.js, and set up a development environment for building Node.js applications.
- Work with Node.js modules and package management, and implement asynchronous programming with callbacks.
- Build web applications with the Express framework, and use routing and middleware in Express.
- Work with MongoDB and NoSQL databases, and use Mongoose for data modeling. Implement authentication and authorization using JSON Web Tokens (JWT), and manage user roles with Node.js and MongoDB.
- Implement real-time communication with Socket.io, and build a real-time chat application with Express and Socket.io.
- Deploy Node.js applications and optimize performance using deployment strategies, continuous integration and delivery (CI/CD), and performance tuning techniques.

Angular

The course on Angular covers a comprehensive curriculum on the popular web application framework developed by Google.

The course will take learners through the fundamental concepts of Angular and its application in building dynamic web applications. The first module covers the history and features of Angular, setting up the development environment, and building a basic Angular application. The subsequent modules delve into topics such as Angular components, templates, and services, data binding and event handling, forms and validation, routing, and state management using Redux.

Modules :

1.Introduction to Angular
2.Angular Components
3.Error handling and Services
4.Routing
5.Forms
6.Material UI
7.Advanced Topics
8.Deployment, Optimization and Deployment
9.Final Project

Learning Outcomes:

- Understand the history and features of Angular and be able to set up a development environment for building Angular applications.
- Build Angular components and templates with data binding, directives, and pipes, and create a basic Angular application with multiple components.
- Understand Angular services and dependency injection, and be able to use HttpClient and HttpInterceptor for data retrieval and error handling.
- Implement dynamic routing with parameterized URLs and navigation using Angular Router, and build a complete Angular application with multiple routes.
- Create and validate forms in Angular, and build a complete Angular form. Understand Angular Material and use its UI component library to build a complete Angular application with Angular Material.
- Explore advanced topics in Angular, including lazy loading, server-side rendering, and monorepo development with Nx workspace.

Data Science And ML

This course offers a comprehensive introduction to the field of data science and its various applications in machine learning. Students will gain a strong foundation in statistical concepts and programming languages such as Python.

The course covers key topics such as data analysis, data visualization, predictive modeling, and deep learning. Students will learn how to work with real-world datasets and apply machine learning algorithms to extract insights and make predictions.

Modules :

1.Introduction to Data Science
2.Data Visualization with Tableau
3.Statistical Analysis
4.Machine Learning Basics
5.Data Wrangling with Python
6.Advanced Data Visualization with Tableau
7.Advanced Machine Learning Techniques
8.Final Project

Learning Outcomes:

- Understand the fundamentals of data science and its applications.
- Develop proficiency in Python programming for data analysis and machine learning.
- Gain knowledge and skills in data visualization using Tableau, including advanced visualization techniques.
- Learn statistical concepts and their application in data analysis and hypothesis testing.
- Understand the basic principles and algorithms of machine learning and their practical applications.
- Develop expertise in data wrangling and cleaning using Python libraries like Pandas.
- Build advanced visualization techniques using Tableau, including interactive dashboards.
- Learn advanced machine learning techniques like deep learning, natural language processing, and big data tools and platforms like Hadoop and Spark.

Artificial Intelligence and ML

This course is a comprehensive introduction to the field of artificial intelligence and machine learning, covering the history, features, and applications of these technologies.

Students will learn how to set up a development environment using Python and Jupyter Notebook, and gain a solid understanding of Python programming for ML, Numpy, and Pandas for data analysis. The course covers a range of topics including supervised and unsupervised learning, neural networks, convolutional neural networks, and recurrent neural networks.

Modules :

1.Introduction and Setup
2.Concepts and Basic Models
3.Supervised Learning
4.Unsupervised Learning
5 & 6. Neural Networks and CNNs
7 & 8. RNNs

Learning Outcomes:

- Set up a development environment with Python and Jupyter Notebook.
- Use Python programming for machine learning and libraries like Numpy and Pandas for data analysis.
- Understand supervised learning and its models, including Linear Regression, Logistic Regression, and Naive Bayes.
- Evaluate model accuracy and measurement, and recognize overfitting and underfitting.
- Build a complete supervised learning model with scikit-learn.
- Understand unsupervised learning and its models, including Clustering and Dimensionality Reduction.
- Use K-means, Hierarchical Clustering, and PCA to build unsupervised learning models.
- Build a basic neural network with Keras.
- Understand Convolutional Neural Networks and their applications.

Cyber Security

This course provide students with the foundational knowledge required to understand cybersecurity and web application security.

Over the course, students will learn about the importance of cybersecurity, security principles, policies, and procedures, common cybersecurity threats and attacks, and ethical hacking and penetration testing. Students will also explore networking fundamentals, web application architecture, web application scanning and enumeration, vulnerability assessment, penetration testing, and fixing web application vulnerabilities.

Modules :

1Introduction to Cybersecurity and Web Application Security
2.Networking Fundamentals for Web Applications
3.Web Application Architecture
4.Web Application Scanning and Enumeration
5.Web Application Vulnerability Assessment
6.Web Application Penetration Testing
7.Fixing Web Application Vulnerabilities
8.Final Project

Learning Outcomes:

- Develop an understanding of the importance of cybersecurity and the fundamentals of security principles, policies, and procedures.
- Gain knowledge on common cybersecurity threats and attacks and become familiar with ethical hacking and penetration testing.
- Understand the basics of web application security, web application architecture, and components, and learn about web servers, databases, and web application frameworks.
- Acquire skills in web application scanning and enumeration using tools like Nmap, Dirb, Burp Suite, and OWASP ZAP.
- Understand web application vulnerability assessment and common web vulnerabilities like SQL injection, cross-site scripting (XSS), and cross-site request forgery (CSRF) while learning how to use tools like Burp Suite, OWASP ZAP, and Nikto for vulnerability assessment.

KNOWLEDGE STREAMS
What Course will your life take ?