

Government of Pakistan

National Vocational and Technical Training Commission

Prime Minister Youth Skills Development Program

"Skills for All"



Course Contents / Lesson Plan
Course Title: Microsoft Power BI
Duration: 2 Months (8 weeks)

Trainer Name	
Author Name	<p>1. Dr. Ahasham Sajid (Assistant Professor, Department of Information Security and Data Science, Riphah Institute of Systems Engineering, Riphah International University, Islamabad)</p> <p>2. Muhammad Nasir Khan (DACUm Facilitator, Ex-DD VT, SS&C Wing, NAVTTC, Islamabad)</p> <p>3. Dr. Inam Ullah Khan, Postdoctoral Research Fellow, Multimedia University, Cyberjaya, Malaysia</p>
Course Title	Microsoft Power BI
Objectives and Expectations	<p>Employable skills and hands-on practice in Android Java + Database</p> <p>Objective: The objective of this course is to learn to use Power BI to connect to data sources and transform them into meaningful insights, prepare Excel data for analysis in Power BI using the most common formulas and functions in a worksheet and learn to use the visualization and report capabilities of Power BI to create compelling reports and dashboards.</p> <p>Expectations:</p> <ol style="list-style-type: none"> i. Receive professional-level training ii. Demonstrate your proficiency in portfolio-ready projects iii. Earn an employer-recognized certificate from NAVTTC iv. Qualify for in-demand job titles: Business Intelligence Analyst, Business Data Analyst, Power BI Analyst. <p>Employable Skills:</p> <ol style="list-style-type: none"> i. Data Analysis with Microsoft Excel: Learn how to make use of Excel in business scenarios for data analysis. Learn how to utilize formulas and functions for data analysis. ii. Harnessing the Power of Data: Understanding database concepts and practical experience in integrating databases into Android apps will make participants valuable assets in roles requiring database management skills. iii. Problem-Solving: Through hands-on practice and troubleshooting exercises, participants will enhance their problem-solving abilities, a crucial skill sought after by employers in the tech industry. iv. Team Collaboration: Collaborative projects and group activities will foster teamwork and communication skills, preparing participants for collaborative work environments. v. Continuous Learning: The course will instill a mindset of continuous learning, essential in the fast-paced field of technology, where new tools and frameworks regularly emerge. <p>Hands-on Practice:</p>

	<ul style="list-style-type: none"> i. Extract, Transform and Load Data: Learn the process of Extract, Transform and Load or ETL. Identify how to collect data from and configure multiple sources in Power BI and prepare and clean data using Power Query. Inspect and analyze ingested data to ensure data integrity. ii. Data Modeling: Use Power BI to create and maintain relationships in a data model and form a model using multiple Schemas. Explore the basics of DAX, Power BI's expression language, and add calculations to your model to create elements and analysis in Power BI. Discover how to configure the model to support Power BI features for insightful visualizations, analysis, and optimization.. iii. Project Work: Participants will work on individual and group projects that involve developing Android applications with database integration. These projects will allow participants to apply their skills to real-world scenarios and build a portfolio to showcase to potential employers. iv. Code Reviews and Feedback: Regular code reviews and feedback sessions will provide participants with constructive criticism to improve their coding practices and application development skills.
Entry-level of trainees	<ul style="list-style-type: none"> • B.Com, IT, BS (AI), BS Physics, BBA, BS Math, M.Com, MBA, ICMA inter, CA-inter and PIPFA qualified.
Trainer Qualifications	<ul style="list-style-type: none"> • Master in Finance and Accounts, IT, MBA, M.Com, master in Audit, ICMA, CA, ACCA with relevant certification and 3 years teaching experience.
Learning Outcomes of the course	<p>The content of this lesson plan is adopted from the internationally recognized ISTQB certification course, "Certified Tester Foundation Level (CTFL)," ensuring alignment with global standards and practices. For further reference, the link to the source material is provided below:</p> <p>Prepare Data for Analysis with Microsoft Excel:</p> <ul style="list-style-type: none"> • Create data in Microsoft Excel and prepare it for data analysis. • Make use of common formulas and functions in a worksheet. • Prepare Excel data for analysis in Power BI using functions. <p>Harness the Power of Data with Power BI:</p> <ul style="list-style-type: none"> • Describe how data is produced and gathered in businesses and organizations. • Outline the role of data in creating data-driven decisions and successful business outcomes. • Classify key stages in the data analysis process. • Recognize the skills needed by a Power BI analyst and the tools they use. • List the tasks performed by a Power BI Data Analyst. • Recognize the components of Power BI. <p>Extract, Transform and Load Data in Power BI:</p> <ul style="list-style-type: none"> • Identify, explain and configure multiple data sources in Power BI. • Clean and transform data using Power Query. • Inspect and analyze ingested data to ensure data integrity.

	<p>Model Data in Power BI:</p> <ul style="list-style-type: none"> • Create and maintain relationships in a data model. • Form a model using a Star Schema. • Write calculations DAX to create elements and analysis in Power BI. • Create calculated columns and measures in a model. • Perform useful time intelligence calculations in DAX. • Optimize performance in a Power BI model.
Course Execution Plan	<p>The total duration of the course: 2 months (8 Weeks) Class hours: 4 hours per day Theory: 40% (64 Hours) Practical: 60% (96 Hours) Weekly hours: 20 hours per week Total contact hours: 160 hours</p>
Companies offering jobs in the respective trade	<ul style="list-style-type: none"> • 31 Green Ltd. • People Pvt. Ltd. • eGeeks Global Pvt. Ltd. • IntegCubes • TeraData Corporation • MTBS • Aricrpta • Microfinance Banks
Job Opportunities	<ul style="list-style-type: none"> • BI Developer • ELT Developer • BI Consultant
No of Students	25
Learning Place	Classroom / Lab
Instructional Resources	<p>Online Courses and Tutorials:</p> <ol style="list-style-type: none"> 1. Microsoft Power BI Data Analyst Professional Certificate: https://www.coursera.org/professional-certificates/microsoft-power-bi-data-analyst 2. Data Storytelling with Power BI: https://www.coursera.org/learn/data-storytelling-with-power-bi 3. Learn Power BI: https://www.microsoft.com/en-us/power-platform/products/power-bi/learning 4. 15 days of Power BI - Complete Microsoft Power BI Bootcamp: https://www.udemy.com/course/15-days-of-power-bi 5. Learn Power BI online: https://www.edx.org/learn/power-bi 6. Power BI Online Training Courses: https://www.linkedin.com/learning/topics/power-bi <p>Books and References:</p>

1. Power BI for Jobseekers: Learn how to create interactive dashboards and reports, and gain insights from the data (English Edition):
<https://www.amazon.com/Power-BI-Jobseekers-interactive-dashboards/dp/9355518145>
2. Power BI For Beginners: Unlock the Full Potential of Data Analytics - Master Advanced Techniques and Visualizations for Transforming Your Data into Actionable Intelligence with Cutting-Edge Strategies
<https://www.amazon.com/Power-Beginners-Visualizations-Transforming-Intelligence/dp/B0D5LLW8D8>
3. Applied Microsoft Power BI (5th Edition): Bring your data to life!
<https://www.amazon.com/Applied-Microsoft-Power-BI-5th/dp/1733046119>
4. Mariya Ouaisa, Zakaria Boulouard, Mariyam Ouaisa, Inam Ullah Khan, Mohammed Kaosar, "Big Data Analytics and Computational Intelligence for Cyber Security", Springer. Link:
<https://link.springer.com/book/9783031057519>
5. Inam Ullah Khan, Mariya Ouaisa, Mariyam Ouaisa, Muhammad Fayaz, Rahmat Ullah, "AI for Intelligent Computing: Future Trends and Applications", CRC Press Taylor & Francis Group. Link:
<https://doi.org/10.1201/9781003496410>
6. Salma El Hajjami, Keshav Kaushik, Inam Ullah Khan, "Artificial General Intelligence (AGI) Security - Smart Applications And Sustainable Technologies", Springer. Link:
<https://link.springer.com/book/9789819732210>
7. Inam Ullah, Inam Ullah Khan, Mariya Ouaisa, Mariyam Ouaisa, Salma El Hajjami, "Future Communication Systems Using Artificial Intelligence, Internet of Things and Data Science", CRC Press Taylor & Francis Group. Link: <https://doi.org/10.1201/9781032648309>
8. Inam Ullah Khan, Salma El Hajjami, Mariya Ouaisa, Salwa Belaqqiz, Tarandeep Kaur Bhatia, "Cognitive Machine Intelligence: Applications, Challenges, and related Technologies", CRC Press Taylor & Francis Group. Link: <https://doi.org/10.1201/9781003500865>
9. Inam Ullah Khan, Hamed Taherdoost, Mitra Madanchian, Mariya Ouaisa, Salma El Hajjami, Hameedur Rahman, "Future of Tech Startups & Innovations In the Age of AI", CRC Press Taylor & Francis Group. Link: <https://doi.org/10.1201/9781032715957>
10. Faisal Rehman, Inam Ullah Khan, Oroos Arshi, Shashi Kant Gupta, "Emerging Trends in Information System Security Using AI & Data Science for Next-Generation Cyber Analytics", Springer. Link:
<https://link.springer.com/book/9783031814808>
11. Hamed Taherdoost, Mitra Madanchian, Inam Ullah Khan, Oroos Arshi, "Business Transformation in the Era of Digital Disruption", IGI global publisher. Link: <https://www.igi-global.com/book/business-transformation-era-digital-disruption/346963>

Practice and Experimentation:

1. Power BI:
<https://www.microsoft.com/en-us/power-platform/products/power-bi>

2. Microsoft Excel:

<https://www.microsoft.com/en-us/microsoft-365/excel>

MODULES

Sched uled Weeks	Module Title	Days	Hours	Learning Units	Home Assignment
Week 1	Power BI Essential	Day 1	1-2	Explore fundamentals of Power BI Essential <ul style="list-style-type: none"> • Introduction to Power BI • Licensing • Power BI Free • Power BI Pro • Power BI Premium • Getting Data from Excel • Basic ETL Techniques using Power Query • Data Modeling • History and Evolution of AI • Understand AI Basics • Master Machine Learning 	Create an Excel worksheet that presents sales figures for the first quarter of the year and compares these figures to the results for the same period in the previous year. This worksheet is called Summary and is in the workbook Quarter One Report.xlsx. In this worksheet, you'll need to complete the following actions: <ul style="list-style-type: none"> • Create formul as that show the total
			3-4	Explore fundamentals of Power BI Essential <ul style="list-style-type: none"> • Basic Formulation with DAX • Data Visualization • Publishing Reports into Power BI Service • Creating Dashboard in Power BI Service • Sharing Dashboard • Sharing Reports • Evaluate Models AI Models 	

		Day 2	1-2	Data Transformation in Power BI <ul style="list-style-type: none"> • Get Data • Different Data Sources • What is Power Query? • Machine Learning Skills • Neural Network Basics • AI vs. Machine Learning vs. Deep Learning 	<p>quarter-one sales for both 2022 and 2023.</p> <ul style="list-style-type: none"> • Create formulas that show the percentage increase in sales in 2023. <p>And break down these totals by month with the use of further calculations.</p>
			3-4	Data Transformation in Power BI <ul style="list-style-type: none"> • Power Query in Excel and Power BI • Basic Transformations • Get Data from Web • Supervised Learning • Unsupervised Learning 	
		Day 3	Hour 1-2	Query Editor <ul style="list-style-type: none"> • Base structures in Power Query • Query Editor in Details • Get Data from SQL Server Data Preparation: <ul style="list-style-type: none"> • Data Collection, Cleaning, Feature Selection, and Engineering Algorithms and Models: <ul style="list-style-type: none"> • Linear Regression, Logistic Regression, 	
				Hour 3-4	

		Day 4	Hour 1-2	Power Query Syntax <ul style="list-style-type: none"> • Data Types in Power Query • Query Properties • Transformation Steps Model Evaluation: <ul style="list-style-type: none"> • Metrics: Accuracy, Precision, Recall, F1-Score • Model Tuning, Cross-Validation, and Overfitting 	
			Hour 3-4	Combine Queries and Transformation <ul style="list-style-type: none"> • Query Operations • Duplicate, and Reference • Managing Queries in Groups • Merge, Joining queries • Append, creating a big list • Combine Binaries; Looping through files in a folder AI Ethics and Future Trends: <ul style="list-style-type: none"> • Ethical Considerations, Bias and Fairness, Emerging Trends 	
		Day 5	Hour 1-2	Table Transformation <ul style="list-style-type: none"> • Column Operations • Row Operations • Filtering • Sorting • Add as new query / Drill Down Practical Applications: <ul style="list-style-type: none"> • Hands-on Projects, Case Studies, 	

				Building Simple AI Applications	
			Hour 3-4	Text Transformation <ul style="list-style-type: none"> • Split • Merge (Concatenate) • Parse • Extract 	
Week 2	Fundamental Analysis	Day 1	Hour 1-2	Numeric Transformation <ul style="list-style-type: none"> • Standard • Scientific • Statistics Introduction to AGI and Core Concepts Topics Covered: <ul style="list-style-type: none"> • What is AGI? • Historical evolution of AI and AGI. • Distinction between AGI and Narrow AI. • Components of AGI: perception, problem-solving, reasoning, and learning. 	Create an in-depth analysis of sales data from the past year to understand sales trends and customer preferences. This isn't a routine analysis. The company is close to launching a new product line next quarter. Your analysis and insights will guide this massive product launch, including the marketing strategy, sales approach, and even the final tweaks to the
			Hour 3-4	More Transformation <ul style="list-style-type: none"> • Date Transformations (Year, Month, Quarter) • Extending Fiscal Date Column • Time Transformations • Adding Time/Date banding • Structured Column • Expand • Aggregate • Add Custom Column • Add Conditional Columns (IF THEN ELSE) 	

		Day 2	Hour 1-2	<p>Power Query Formula Language:</p> <ul style="list-style-type: none"> • What is M? and the importance of learning M • M Syntax • Things to Consider for M Scripting • Basic examples of M • Values in M • Logical Operations 	<p>product! Each number, trend, and pattern you uncover from the dataset could directly impact hundreds of decisions.</p> <p>Perform the following tasks.</p> <ul style="list-style-type: none"> • Identify the stakeholders • Identify and consider the data sources <p>Data import and cleaning</p>
			Hour 3-4	<p>Advanced M Scripting</p> <ul style="list-style-type: none"> • Shared Keyword; function library of Power Query • Parameters • Custom Functions • Error Handling in Power Query • Generators in Power Query: Implementing Loop Structure EACH singleton function <p>Learning Outcomes:</p> <ul style="list-style-type: none"> • Define and explain the core concepts of AGI. • Understand the evolution and components of AGI systems. <p>Assignments:</p> <ul style="list-style-type: none"> • Reading on AGI history and major milestones. • Short quiz on AGI vs. Narrow AI. 	

		Day 3	Hour 1-2	Power BI Modeling <ul style="list-style-type: none"> • Relationship in Power BI • Relationship based on multiple Columns • Role Playing Dimension • 	
			Hour 3-4	Power BI Modeling <ul style="list-style-type: none"> • Formatting • Hide/Unhide • Hierarchy • Basic Calculated Column and Measure • Sort by Column 	
		Day 4	Hour 1-2	Introduction to DAX <ul style="list-style-type: none"> • Syntax of DAX • Naming in DAX • Logical Operations 	
			Hour 3-4	Introduction to DAX <ul style="list-style-type: none"> • Data Types in Power BI Model • Overview of Functions • Variables 	
		Day 5	Hour 1-2	Functions in DAX in Details <ul style="list-style-type: none"> • Text Functions • Information Functions • Logical Functions 	
			Hour 3-4	Functions in DAX in Details <ul style="list-style-type: none"> • Date and Time Functions • Aggregation Functions 	

Week 3	Technical Analysis	Day 1	Hour 1-2	Filter, Value, and Relationship Functions <ul style="list-style-type: none"> • ALL • Examples of using ALL function • Filter Function • Related • Related Table Challenges in AGI Development <p>Topics Covered:</p> <ul style="list-style-type: none"> • Technological challenges in AGI development. • Computational limitations: processing power, generalization, adaptability. • Replicating human-like cognitive skills in AGI. 	<p>You are working as a data analyst. Sales data is contained in two main tables, Order and OrderDetails.</p> <p>Conduct a detailed analysis of store sales. In the detail table, OrderDetails, there are multiple fields, but you only need ProductID, the quantity sold (which is in the field OrderQty), and the UnitPrice. Therefore, you are expected to remove unnecessary fields, and eliminate empty rows, and identify any anomalies to remove those rows if necessary. After performing these tasks, you will append the two separate sales data sources</p>
			Hour 3-4	Evaluation Contexts <ul style="list-style-type: none"> • Row Context • Filter Context • Exception for Row Context • Exception for Filter Context • Calculate Function 	
		Day 2	Hour 1-2	Time Intelligence Functions <ul style="list-style-type: none"> • Running Total • Rolling Month Sales • Flexible banding 	
			Hour 3-4	Calculated Tables <ul style="list-style-type: none"> • Role Playing Dimension • Top 10 Customers • Dynamic Date Table 	

				<ul style="list-style-type: none"> • More Scenarios of Using Calculated Tables • Performance Consideration 	together and then merge that with OrderDetails.
	Day 3	Hour 1-2	Best Practices Tips and Tricks <ul style="list-style-type: none"> • Modeling Best Practices • Advanced Time Intelligence • Advanced Relationship in DAX • Hierarchies in DAX 		
		Hour 3-4	Visualization Basics <ul style="list-style-type: none"> • Basic Charts • Clustered vs Stacked • Quick Calcs in Power BI • Interaction of Visuals • Pages 		
	Day 4	Hour 1-2	Visualization Best Practices <ul style="list-style-type: none"> • Pie Chart; Be Careful • Coloring • Show me the Numbers • Which Chart is the Best? • Story Telling • Combining Visuals Learning Outcomes: <ul style="list-style-type: none"> • Identify challenges in AGI development. • Evaluate limitations in AGI's progress. Assignments: <ul style="list-style-type: none"> • Research paper review on AGI limitations. 		

				<ul style="list-style-type: none"> • Discussion forum on technological hurdles in AGI. 	
			Hour 3-4	Slicing and Dicing <ul style="list-style-type: none"> • Filters • Slicers • Filtering Slicers • Drill Down/Up 	
		Day 5	Hour 1-4	Custom Formatting Visuals <ul style="list-style-type: none"> • Labels • Legend • Color • Extended visualization formatting • Group / bin 	
Week 4		Day 1	Hours 1-4	Special Visuals <ul style="list-style-type: none"> • Waterfall Chart; Cash flow • Scatter Chart; Story Telling • Line Chart; Powerful • Table and Matrix with Conditional Formatting • R Visualization Security Risks in AGI Topics Covered: <ul style="list-style-type: none"> • AGI system vulnerabilities: adversarial attacks, data breaches, model poisoning. • Risk assessment and mitigation strategies. • Introduction to secure coding practices for AGI systems. 	Guided project: Modeling data with Power BI

			Hour 3-4	Map Visualization <ul style="list-style-type: none"> • Default map visual • Filled Map; Good, bad, and the ugly • Shape Map • Custom Map Visuals • ArcGIS 	
		Day 2	Hour 1-2	Custom Visuals <ul style="list-style-type: none"> • Using Custom Visuals • Synoptic Panel by SQLBI • Chicklet Slicer • 3D Map with Globe Map Visual • Sunburst • Time Slicers 	
			Hour 3-4	KPIs in Power BI <ul style="list-style-type: none"> • KPI Default visual • Dial Gauge • Linear Gauge • Bullet Chart 	
		Day 3	Hour 1-2	Gateways <ul style="list-style-type: none"> • What is Gateway? • Two types of Gateway • Personal Gateway; an example • On-premises Gateway; not only for Power BI <p>Learning Outcomes:</p> <ul style="list-style-type: none"> • Assess security risks in AGI systems. • Apply risk mitigation techniques. <p>Assignments:</p> <ul style="list-style-type: none"> • Case study on AGI security incidents. • Security risk analysis project. 	

			Hour 3-4	On-premises Gateway in Details <ul style="list-style-type: none"> • Requirements for on-premises gateway • Architecture Flow diagram of the gateway • Installation and Configuration considerations 	
		Day 4	Hour 1-2	On-premises Gateway in Details <ul style="list-style-type: none"> • Install and Configure Gateway example • Data Source Definition in Power BI Service • Schedule Refresh 	
			Hour 3-4	Gateway Performance <ul style="list-style-type: none"> • Performance Considerations • Limitations of Gateway 	
		Day 5	Hour 1-4	Direct Query <ul style="list-style-type: none"> • Step beyond 1/10GB Limitation in Power BI • Limitations of Direct Query • Dashboard and Report considerations for DirectQuery • Performance Considerations 	
Week 5		Day 1	Hour 1-4	Live Query <ul style="list-style-type: none"> • Using SSAS Live data source (if using) • Difference of DirectQuery and Live Query 	

				Ethics and Social Implications of AGI Topics Covered: <ul style="list-style-type: none"> Ethical implications of AGI: bias, fairness, accountability, transparency. Societal impact of AGI on industries and jobs. Privacy concerns and power dynamics with AGI. 	
		Day 2-4	Hour 1-4	Power BI Service <ul style="list-style-type: none"> Dashboard vs Report Dashboard Tiles Data Classification Power Q&A Tips and Tricks for Power Q&A	
		Day 5	Hour 1-4	Hands-on practice and final assessments. Practical exercises and case studies.	
Week 6		Day 1-2	Hour 1-4	Sharing <ul style="list-style-type: none"> Dashboard Sharing Work Groups in Power BI Content Packs Publish to Web Comparison of all Sharing methods Learning Outcomes: <ul style="list-style-type: none"> Critically analyze ethical concerns in AGI. 	Exercises

				<ul style="list-style-type: none"> Evaluate the societal impact of AGI on industries. <p>Assignments:</p> <ul style="list-style-type: none"> Group presentation on AGI's ethical dilemmas. Essay on the impact of AGI on the workforce. 	
		Day 3-5	Hour 1-4	<p>Administration</p> <ul style="list-style-type: none"> Admin Portal Set Power BI Administrator Tenant Settings Audit Log 	
Week 7		Day 1-2	Hour 1-4	<p>Row Level Security</p> <ul style="list-style-type: none"> ○ Row Level Security in Power BI; regardless of Data Source ○ Row Level Security in SSAS Live Connection ○ Dynamic Row Level Security <p>AGI Applications and Integration with Emerging Technologies</p> <p>Topics Covered:</p> <ul style="list-style-type: none"> Real-world AGI applications in healthcare, finance, robotics, and autonomous systems. Integration of AGI with quantum computing, blockchain, and IoT. Synergies and risks of combining AGI 	

				with other emerging technologies.	
		Day 3-5	Hour 1-4	Integration <ul style="list-style-type: none"> Analyze in Excel Power BI Publisher for Excel Reporting Services and Power BI Power BI and Power Point 	
Week 8		Day 1-4	Hour 1-4	DAX Optimization <ul style="list-style-type: none"> Use of DAX Studio DAX Query Profiling Evaluate DAX queries Optimization Techniques Working with Predictive Analytics in Power BI <ul style="list-style-type: none"> Introduction to Artificial Intelligence Introduction to Predictive Analytics Basics Statistics Learning Outcomes: <ul style="list-style-type: none"> Apply AGI principles to real-world scenarios. Understand AGI integration with emerging technologies. Assignments: <ul style="list-style-type: none"> Case study analysis of AGI in healthcare or finance. Project proposal for integrating AGI with IoT	
		Day 5	Hour 1-4	<ul style="list-style-type: none"> Means, Mode, 	

				<p>MAX, T Value, PValu e, STDEV , Correl ation</p> <ul style="list-style-type: none">• Introduction to Linear Regression• Use of Python in Power BI• Predictive Analytics using Python Libraries in Power BI <p>Future Directions, Risks, and Governance in AGI</p> <p>Topics Covered:</p> <ul style="list-style-type: none">• Future challenges in AGI deployment, including decentralized AGI.• Proposing solutions for mitigating AGI deployment risks.• Global governance, ethical frameworks, and collaboration in AGI development. <p>Learning Outcomes:</p> <ul style="list-style-type: none">• Critically reflect on future risks in AGI.<ul style="list-style-type: none">• Propose governance and global frameworks for AGI. <p>Assignments:</p> <ul style="list-style-type: none">• Final project: AGI risk assessment and mitigation strategy.	
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				Group discussion on AGI governance and future risks.	
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Practical Tasks:

Annexure-IV:

Practical Tasks:

	Task	Description	Week
1	Introduction to Power BI Essential	Open Power BI Desktop and explore its interface, including the Report View, Data View, and Model View. Import a sample dataset, such as an Excel file with sales data. Create a simple bar chart to visualize total sales by product category. Customize the chart by adjusting labels and colors for better readability. Finally, save your Power BI file and take a screenshot of your report for review.	Week 1
2	Fundamental Analysis of power BI	Import a financial dataset into Power BI and perform basic data cleaning using Power Query. Create a table visualization to display key financial metrics like revenue, profit, and expenses. Use DAX formulas to calculate profit margins and visualize trends with a line chart. Save and analyze the insights derived.	Week 2
3	Filter, Value, and Relationship Functions	Load a sample dataset with multiple related tables into Power BI. Use the Manage Relationships feature to establish relationships between tables. Apply FILTER and RELATED DAX functions to extract specific data, such as total sales for a selected category. Create a visual report to showcase filtered results and verify data consistency. Save your work for further analysis.	Week 3
4	Special Visuals	Explore and add special visuals like Maps, KPI Indicators, and Gauge	Week 4

		Charts in Power BI. Import a dataset containing sales or geographic data and use the Map visual to display sales by region. Create a KPI visual to track key performance metrics and a	
5	Live Query	Connect Power BI to a live data source, such as an SQL Server database, using DirectQuery mode. Explore how real-time data updates reflect automatically in reports. Create a table visual to display live sales or inventory data and apply filters to analyze specific trends. Save and refresh the report to observe dynamic updates.	Week 5
6	Sharing	Publish a Power BI report to the Power BI Service and explore different sharing options. Share the report with team members using Dashboard Sharing and configure permissions for access control. Use Publish to Web to generate a public link and test report accessibility. Save and document the sharing settings for future reference.	Week 6
7	Row Level Security	Implement Row-Level Security (RLS) in Power BI to restrict data access based on user roles. Create a role-based filter using Manage Roles in the Modeling tab. Apply DAX expressions to limit data visibility, such as showing sales data only for a specific region or department. Test the security setup using the View as Role feature and save your report.	Week 7
8	EXAM	<ul style="list-style-type: none"> ● Students Presentation about the projects ● Activity based exam 	Week 8

Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue, or

value to strengthen character and individual abilities. It is a set of values-centered on the importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for student success:

1. Attendance:

Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. Character:

Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. Team Work:

The ability to get along with others including those you don't necessarily like. The ability to carry your weight and help others who are struggling. Recognize when to speak up with an idea and when to compromise by blend ideas together.

4. Appearance:

Dress for success set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are can last a lifetime

5. Attitude:

Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids unnecessary risks. Willing to learn new processes, systems, and procedures in light of changing responsibilities.

6. Productivity:

Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know-how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. Organizational Skills:

Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Take an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. Communication:

Written communication, being able to correctly write reports and memos. Verbal communications, being able to communicate one on one or to a group.

9. Cooperation:

Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing work situations and the application of new or different skills.

10. Respect:

Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept, and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions, and suggestions.
