

COURSE SYLLABUS

ACADEMIC YEAR (2025 - 2026)

College/ Institute KOYA TECHNICAL INSTITUTE

Department Information Technology (IT)

Module Name Applied Business Intelligence

Module Code ABI202

Degree Technical Diploma

Semester 2nd

ECTS (Credits) 6

Module type CORE

Weekly hours 4

Weekly hours (Theory) 2 HOURS

Weekly hours (Practical) 2 HOURS

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Qualification PhD

Scientific Title LECTURER

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COURSE DESCRIPTION

This course introduces students to practical business intelligence using industry-standard tools like Microsoft Excel and Power BI. It covers foundational data analysis concepts, data visualization, dashboard creation, and decision-making support using real-world datasets.

COURSE LEARNING OUTCOMES

By the end of this course, students will:

- 1- Understand BI principles and their role in IT
- 2- Analyze and manipulate business datasets using Excel
- 3- Build dynamic dashboards using Excel and Power BI
- 4- Visualize key metrics for decision-makers
- 5- Connect, clean, and transform data from multiple sources
- 6- Interpret business trends and present actionable insights.

6- TROUBLESHOOT AND TEST NETWORKS COURSE SCHEDULE

WEEKS	TOPICS (theoretical)	TOPICS (Practical)
WEEK - 01	<ul style="list-style-type: none"> ▪ Course overview. ▪ Introduction to Business Intelligence. ▪ Benefits of Business Intelligence. ▪ Business intelligence vs. Data Analysis ▪ How Business Intelligence Systems are Implemented. 	<ul style="list-style-type: none"> ▪ Exploring a real business dataset (sales data). ▪ Understanding rows, columns, data types ▪ Formatting data as Excel Tables. ▪ Basic Calculations: SUMIF, SUMIFS, COUNTIF, COUNTIFS, SUMPRODUCT, AVERAGE. ▪ Sorting and filtering business data.
WEEK - 02	<ul style="list-style-type: none"> ▪ The Core Components of Business intelligence. ▪ How Business intelligence supports decision making. ▪ Advantages and Disadvantages of Business intelligence 	<ul style="list-style-type: none"> ▪ Ranges, cells, and Sheets in Excel. ▪ Using IF functions. ▪ Using VLOOKUP / XLOOKUP. ▪ INDEX and MATCH
WEEK - 03	<ul style="list-style-type: none"> ▪ Introduction to Descriptive Statistics. ▪ Types of Data and variables ▪ Measures of Central Tendency (Mean, Median, Mode). 	<ul style="list-style-type: none"> ▪ Calculating Measures of Central Tendency in Excel (Mean, Median, Mode, Percentile, and Percentile Rank)
WEEK - 04	<ul style="list-style-type: none"> ▪ Measures of Dispersion (Range, Variance, Standard Deviation, Coefficient of Variation) 	<ul style="list-style-type: none"> ▪ Excel Functions (Range, Min, Max, standard deviation and variance)

WEEK - 05	<ul style="list-style-type: none"> ▪ Data Cleaning & Data Preparation ▪ Importance of clean data in Business Intelligence. ▪ Common data problems (duplicates, missing values, errors). ▪ Date and Time handling in datasets. 	<ul style="list-style-type: none"> ▪ Data cleaning techniques in Excel ▪ Text functions for data preparation ▪ Removing duplicates. ▪ Handling missing values ▪ Data validation rules ▪ Converting raw data into analysis-ready format.
WEEK - 06	<ul style="list-style-type: none"> ▪ PivotTables & Pivot Charts for Business Insights. ▪ Introduction to PivotTables ▪ PivotTable structure and fields ▪ Grouping data (dates, categories) ▪ Calculated fields in PivotTables ▪ Pivot Charts for visualization. 	<ul style="list-style-type: none"> ▪ Creating PivotTables for (Sales by region, Sales by product, Monthly trends) ▪ Applying filters and slicers ▪ Creating interactive Pivot Charts
WEEK - 07	<p>Introduction to Power BI Interface, workspace, report/dashboard concepts.</p>	<p>Install & connect Power BI to Excel/CSV sources</p>
WEEK - 08	<p>Data Modeling Basics Relationships, star schema, normalization</p>	<p>Build data models in Power BI (relationships between tables)</p>
WEEK - 09	<p>Visualization Fundamentals Chart types, visual best practices</p>	<p>Create visuals: bar, line, pie, table, slicers in Power BI</p>
WEEK - 10	<p>Data Transformation with Power Query ETL concepts</p>	<p>Power Query Editor: cleaning, filtering, merging tables.</p>
WEEK - 11	<p>Time Intelligence & Calculations (DAX basics) Measures, calculated columns</p>	<p>Use DAX for Year-to-Date, Month-over-Month growth</p>
WEEK - 12	<p>Interactive Dashboards Drill-through, filters, bookmarks</p>	<p>Design an interactive dashboard in Power BI</p>
WEEK - 13	<p>Reporting & Storytelling Design principles, color theory, business insights</p>	<p>Finalize Power BI reports with titles, tooltips, export</p>

GRADING POLICY

To successfully complete this course, students must achieve a passing grade of 60% or higher on the overall course.

TOOLS	TYPE	WEIGHT (%)
Assignments	Projects	5
	Quizzes	4
	Reports and Seminars	10
	Lab Projects and Reports	10
	HomeWorks and Class Activity	6
Mid-Term Exam	Practical	15
	Theoretical	10
Final Exam	Practical	20
	Theoretical	20
Overall		100

REQUIRED TEXTBOOKS

TEXTBOOK	AUTHOR
illustrated Handbook of Business Intelligence	BIBLIOTEX digital Library
Microsoft Excel Formulas and Functions	Paul McFedries

STUDENT'S OBLIGATION

- Class lectures and discussions are an integral part of this course. Attendance at both is mandatory.
- Students need to respect the ideas and opinions of their classmates in and outside of the classroom.
- Each student is required to engage in classroom activities, participate in labs, submit assignments and reports on time, and take exams and tests on time.
- Web-browsing or online chatting in class is not allowed. Cell Phones are to be turned off or switched into silence mode during lectures and tests.