Visvesvaraya Technological University Belagavi

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Department of Computer Science and Engineering

Report on Value Added Course

"Data Analytics Essentials"

Sem : VI

SUBMITTED BY

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Guide — **Prof. Partap Solapur**

HOD — **Dr.Anil.Kannur**

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1)Introduction

The **"Data Analytics Essentials"** course by **Cisco Networking Academy (NetAcad)** is a foundational program that introduces learners to the core concepts and tools of data analysis. In today's data-driven world, understanding how to analyze and interpret data is essential across industries such as IT, finance, healthcare, and business.

This course is designed to help learners understand the full data analytics lifecycle—from data gathering, cleaning, and transformation, to analysis and visualization. It focuses on real-world applications and introduces widely used tools such as **Excel**, **SQL**, and **Tableau**.

Through interactive modules and hands-on projects, I learned how to manipulate data using Excel, extract meaningful insights using SQL queries, and create impactful dashboards with Tableau. One key highlight was the project involving a **popular movies dataset**, which allowed me to apply all the concepts in a real-world scenario.

The course also emphasizes ethical data use and bias detection, helping learners approach data analysis responsibly. By the end, I built a solid foundation in analytics and created a portfolio project that demonstrates my skills.

This course is an ideal starting point for anyone looking to enter the field of data analytics or enhance their decision-making abilities using data.

2) Course Objectives

The **Data Analytics Essentials** course was designed with the following objectives:

1. To introduce the basic principles and importance of data analytics in modern industries.
2. To explain the complete **data lifecycle**, including collection, cleaning, transformation, analysis, and visualization.
3. To teach the use of practical tools like **Excel**, **SQL**, and **Tableau** for data handling and reporting.
4. To help students apply **basic statistical methods** to interpret data effectively.
5. To encourage critical thinking and develop an **analytical mindset** for solving data-related problems.
6. To guide learners in **building a professional portfolio** by working on a real-world dataset.
7. To highlight the importance of **ethics and bias** in data analysis and promote responsible data practices.
8. To prepare learners for **further study** or careers in data science, business intelligence, and related fields.

3) Modules Covered

The **Data Analytics Essentials** course was structured into ten detailed modules, each focusing on a specific aspect of the data analytics process. Below is a summary of the modules covered:

Module 1: Data Analytics Projects

Introduced the basics of analytics in real-world contexts and the importance of developing a portfolio.
Topics included: Analytics in Real-Time, Data Analytics in Action, and the role of project portfolios.

Module 2: Getting Started with Data Gathering and Investigation

Explored tools and techniques for understanding data, including key Excel functions.
Topics included: Excel basics, data formats, and how to begin exploring datasets.

Module 3: Preparing and Cleaning Data for Analysis

Focused on preparing raw data for analysis by handling both structured and unstructured data.
Topics included: Data sources, data formatting, handling missing values, and cleaning techniques.

Module 4: Transforming Data with Excel

Taught how to organize, sort, filter, and calculate data using Excel.
Topics included: Data transformation, formula usage, and formatting for clarity.

Module 5: Analyze the Data Using Statistics

Covered basic statistical concepts and how to apply them to real-world datasets.
Topics included: Mean, median, mode, outlier detection, and using Excel for statistical analysis and chart creation.

Module 6: Introduction to Relational Databases and SQL

Introduced the fundamentals of databases and how to use SQL to manage data.
Topics included: Table creation, data types, and basic SQL queries.

Module 7: Introduction to Structured Queries

Advanced the use of SQL for handling multiple tables and complex data retrieval.
Topics included: Joins, nested queries, and SQL data management functions.

Module 8: Introduction to Tableau

Explored Tableau as a powerful tool for interactive data visualization.
Topics included: Building dashboards, creating different chart types, and presenting data insights.

Module 9: Ethics and Bias in Data

Raised awareness of ethical concerns in data analytics and how to identify and avoid bias.
Topics included: Data fairness, privacy concerns, and responsible data usage.

Module 10: Take the Next Steps

Guided learners on building their analytics portfolios and planning future learning. Topics included: Portfolio requirements, expanding skills, and career guidance.

4) Learning Outcomes

By completing the **Data Analytics Essentials** course, I achieved several valuable learning outcomes that have strengthened both my technical and analytical skills. These outcomes include:

Gained a strong understanding of the **data analytics process**, from data collection to visualization.

Learned how to **gather, clean, and prepare data** using tools like Excel and basic programming logic.

Became proficient in using **Excel** functions and formulas for data transformation, calculations, and statistical analysis.

Understood and applied basic **statistical methods** such as averages, percentages, and variance to analyze trends in datasets.

Developed the ability to create **charts and dashboards** in Excel and **interactive visuals in Tableau** for effective data presentation.

Acquired skills to write and execute **SQL queries** to retrieve and filter data from relational databases.

Built awareness of **data ethics and bias**, ensuring responsible and fair data analysis practices.

Completed a real-world data project involving a **popular movies dataset**, applying all tools and techniques learned.

Created a portfolio-ready project that demonstrates my capabilities in **Excel, SQL, and Tableau**.

Developed confidence to pursue advanced learning in **data science, business analytics, or machine learning**.

5) Assessment and Certification

The **Data Analytics Essentials** course included a variety of interactive learning activities, quizzes, and a final assessment to evaluate the learner's understanding and application of key concepts. The assessment and certification details are as follows:

I successfully **completed all ten modules**, each containing videos, readings, practice exercises, and knowledge checks.

After completing the modules, I passed the **final assessment quiz**, which tested my knowledge of data analytics tools and concepts.

I received an official **Certificate of Completion** from **Cisco Networking Academy (NetAcad)** as a recognition of my achievement.

Along with the certificate, I was awarded a **digital badge** that represents my foundational skills in **Excel, SQL, and Tableau**, which can be shared on platforms like LinkedIn and in my resume.

The assessment process ensured that I not only understood the theoretical concepts but also applied them practically through hands-on projects and real-world scenarios.

The final project, which involved analyzing a **popular movies dataset**, served as a capstone to demonstrate my analytical skills in a complete workflow—from data collection to visualization.

6) Benefits and Impact

Completing the **Data Analytics Essentials** course provided several academic, professional, and personal benefits that will have a long-lasting impact on my career development. These are summarized below:

Academic Benefits

Strengthened my foundation in **data analytics**, supporting my ongoing studies in engineering and related subjects.

Enhanced my ability to use **analytical thinking** and **problem-solving skills** in academic projects and research.

Helped me understand how to use **data tools** (Excel, SQL, Tableau) for various academic assignments and presentations.

Professional Skills Gained

Gained practical experience with industry-standard tools used in analytics roles.

Learned how to **analyze and interpret real-world datasets**, increasing my employability in data-focused job roles.

Developed a **portfolio-ready project**, which can be used to showcase my capabilities in job interviews or internships.

Career Impact

Prepared me for entry-level roles in **data analysis, business intelligence, and data visualization**.

Provided a solid base to explore advanced fields such as **data science, machine learning, and AI**.

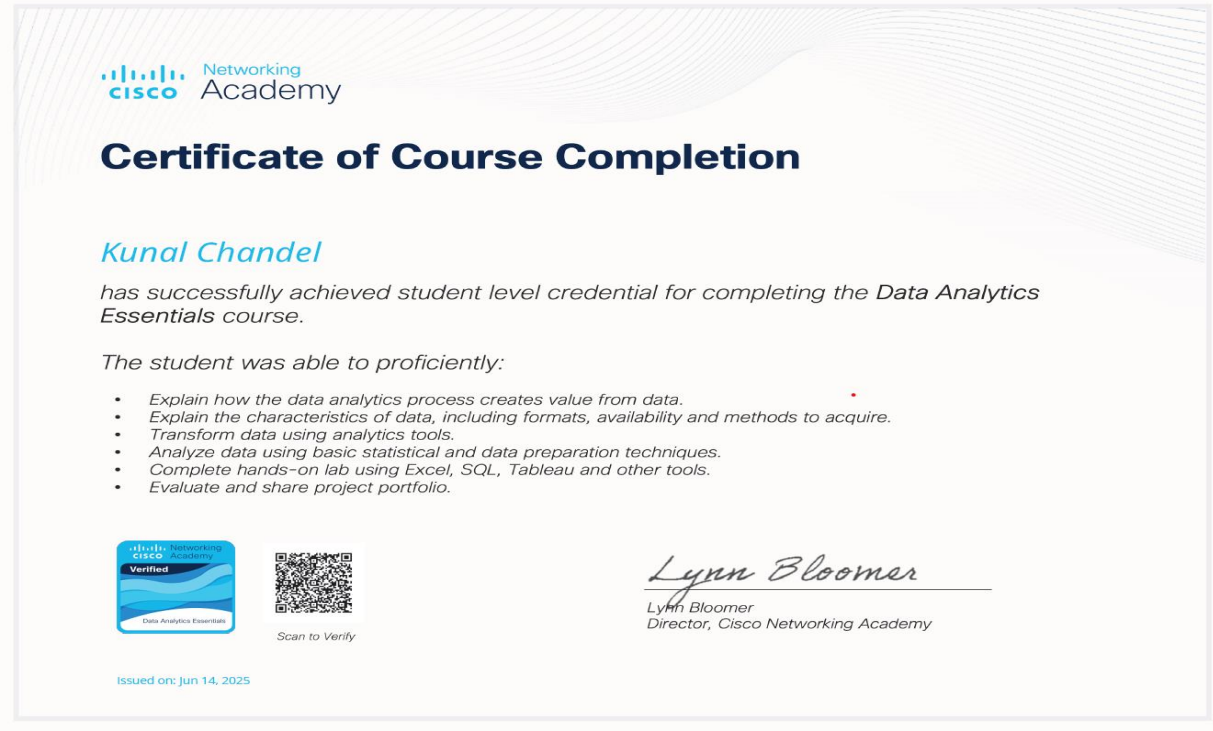
Boosted my confidence to work independently on data projects and contribute effectively in team-based environments.

Personal Development

Encouraged a **data-driven mindset**, allowing me to make more informed decisions based on evidence and insights.

7) Attachments

Certicate of Course Completion



Networking Academy

Certificate of Course Completion

Kunal Chandel

has successfully achieved student level credential for completing the Data Analytics Essentials course.

The student was able to proficiently:

- *Explain how the data analytics process creates value from data.*
- *Explain the characteristics of data, including formats, availability and methods to acquire.*
- *Transform data using analytics tools.*
- *Analyze data using basic statistical and data preparation techniques.*
- *Complete hands-on lab using Excel, SQL, Tableau and other tools.*
- *Evaluate and share project portfolio.*

Verified — Data Analytics Essentials

Scan to Verify

Lynn Bloomer

Lynn Bloomer
Director, Cisco Networking Academy

Issued on: Jun 14, 2025

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8) Conclusion

The **Data Analytics Essentials** course offered by **Cisco Networking Academy** was an enriching and highly valuable learning experience. It provided me with a clear understanding of the complete data analytics process—from data collection and preparation to analysis and visualization—using powerful tools like **Excel**, **SQL**, and **Tableau**.Through interactive modules, practical exercises, and a real-world project, I developed the technical skills and analytical mindset required to handle and interpret data effectively. The course also emphasized the ethical use of data and the importance of eliminating bias, shaping me into a more responsible and informed data practitioner.

This course not only strengthened my academic foundation but also prepared me for future opportunities in data-related fields. With the knowledge and hands-on experience gained, I now feel confident to take the next steps in my learning journey and pursue more advanced studies or roles in **data science, business intelligence, or analytics**.Overall, this course has been a stepping stone toward becoming a data-literate professional, ready to thrive in a world driven by information and insights.