
Welcome to course

**DS-3003 Data Warehousing &
Business Intelligence**

Outlines

- About Me
- Course information
- Teaching team
- Learning outcomes
- Course contents and schedule
- Assessments
- Resources
- Lecture 01



Course Information

Course Title:	Data Warehousing & Business Intelligence
Course Code:	DS 3003
Prerequisites:	MT 2005 Probability & Statistics
Level:	3

Teaching Team

- **Professor Muhammad Asif Naeem**

Course coordinator & lecturer

Email: asif.naeem@nu.edu.pk

Office: C205E-New Building

Office hours: Mon 10am – 12:50pm

Tue 10am – 11:20am

Fri 11:30 – 12:50pm



- **TA**
TBA

Announcements and course updates

- Slides and all other material will be available at Google Classroom.
- Assignments will be submitted through the Google Classroom.
- To register the course page at the Google Classroom you will must use your NU email.
- At the Google Classroom your name must be displayed in the format: “StudentID-FirstName-LastName”.

Why should you be here?

- Bad decisions can lead to disaster
 - Data Warehousing is at the **base of decision support systems**
























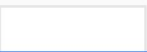



Why should you be here?

- Data Warehousing & OLAP are important
- They help to
 - Understand the information **hidden** within an organization's data
- See data from different angles:
product, client, time, geographical area
- Get adequate statistics to get your point of argumentation across
- Get a glimpse of the future...



Why should you be here?

	ETL Engineer Afiniti Lahore via LinkedIn  Over 1 month ago  Full-time		Senior Data Warehouse And Etl Developer Bilytica Lahore via GetPakJob  Over 1 month ago  Rs 0 a month	
	Senior Data Warehouse & ETL Developer Bilytica (Pvt) Ltd via Jobee.PK  Over 1 month ago  Full-time		ETL Developer Cinnova Technologies, LLC Lahore via Jobviate.com  Over 1 month ago  Full-time	
	ETL Engineer Afiniti Karachi via LinkedIn  12 days ago  Full-time		BI Developer Broadpeak Technologies Islamabad via RedHired  3 days ago  12 min  Full-time	
	Senior Data Warehouse And Etl Developer		Data Engineer	

Learning Outcomes

1. Demonstrate an appreciation of the role that Data Warehouses (DW) and Big Data play in enhancing the decision-making process.
2. Demonstrate an understanding of the fundamental concepts of the Star and the Snowflake Schema; learn how to design the schema of a DW based on these two models.
3. Understand the architecture of DW Systems and be able to specify the advantages and potential problem areas.
4. Use Analytic SQL to aggregate, analyse and report, and model data.
5. Conduct a critical appraisal of concepts and applications of Big Data management technologies

Course Contents and Schedule

Week	LECTURE	LAB
1	Introduction to course, Introduction to Data Warehouses	Introduction with lab course, Introduction with tool e.g. MySQL
2	DW Life Cycle and Basic Architecture	Basic SQL Data Retrievals Queries (SELECT statement and its variations)
3	Storage Architecture	Advance Data Retrievals Queries e.g. joins, group functions, and subqueries
4	DW Modeling – Conceptual Model	SQL Queries based on Data Manipulation Language e.g. UPDATE, DELETE and INSERT statements
5	Logical Model	SQL Queries based on Data Definition Language Create Schema/tables through SQL Focus on different constraints that must be follow during creation
6	Physical Model	SQL Transaction Control Language e.g. ALTER, DROP, RENAME SQL queries, COMMIT, ROLLBACK and SAVE POINT statements in SQL
7	Project Brief	Creating DWH Star and Snowflake Schema
8	Indexes	PLSQL datatypes & control statements
9	Indexes (continued)	PLSQL collections & records and static SQL
10	Optimisation	Dynamic SQL and PLSQL subprograms
11	Optimisation (continued)	OLAP Queries basic
12	OLAP Queries	OLAP Queries Optimization
13	OLAP Queries (continued)	Creating Materialized View
14	Building the DW	Data visualization and reporting based on Datawarehouse
15	Real-time Data Warehousing Project submission	Implementing Real-time ETL
16	Business Intelligence	Revision and project discussion

Assessments

Assessment type	Marks weight
Practical Tasks	15%
Mid Exam	25%
Final	40%
Project	20%



Course Policies

- **Grading policy**

There will be absolute grading

- **Missed assessment items policy**

Retake of missed assessment items (other than midterm/ final exam) will not be held. For a missed midterm/ final exam, an exam retake/ pretake application along with necessary evidence are required to be submitted to the department secretary.

- **Plagiarism policy**

Plagiarism in project or midterm/ final exam may result in F grade in the course. Plagiarism in an assignment will result in zero marks in the whole assignments category.

Recommended Literature

- Building the Data Warehouse
 - William H. Inmon
 - Wiley, ISBN 978-0-7645-9944-6
- The Data Warehouse Toolkit
 - Ralph Kimball & Margy Ross
 - Wiley, ISBN 978-1-118-53080-1

