Lovely Professional University, Punjab

Course Code	Course Title	Course Planner	Lectures	Tutorials	Practicals	Credits
INT217	INTRODUCTION TO DATA MANAGEMENT	22954::Dalveer Kaur Grewal	0	0	4	3
Course Weightage	ATT: 5 CAP: 45 ETP: 50	**Exam Category: X7D: MTE: Not Applicable: ETE: Internal Viva (Without R Grade), Formal class conducted, attendance mandatory**				
Course Orientation	RESEARCH, SKILL ENHANCEMENT					

	Reference Books (R)		
Sr No	**Title**	**Author**	**Publisher Name**
R-1	MICROSOFT EXCEL 2016 BIBLE: THE COMPREHENSIVE TUTORIAL RESOURCE	JOHN WALKENBACH	WILEY
R-2	PROFESSIONAL MICROSOFT SQL SERVER 2014 INTEGRATION SERVICES	BRIAN KNIGHT, DEVIN KNIGHT, JESSICA M. MOSS, MIKE DAVIS, CHRIS ROCK	WILEY
R-3	FUNDAMENTALS OF BUSINESS ANALYTICS	R.N. PRASAD, SEEMA ACHARYA	WILEY

Relevant Websites (RW)		
Sr No	**(Web address) (only if relevant to the course)**	**Salient Features**
RW-1	https://docs.oracle.com/cd/B13789_01/olap.101/b10333/multimodel.htm	Multidimensional data model
RW-2	http://etl-tools.info/en/bi/etl_process.htm	ETL tools
RW-3	https://docs.oracle.com/cd/B19306_01/server.102/b14223/ettover.htm	ETL process
RW-4	https://docs.microsoft.com/en-us/sql/integration-services/lesson-1-create-a-project-and-basic-package-with-ssis	SSIS project creation and basics
RW-5	http://datawarehouse4u.info/OLTP-vs-OLAP.html	OLTP and OLAP
RW-6	http://www.excel-easy.com/	Excel basics and functions

Audio Visual Aids (AV)		
Sr No	**(AV aids) (only if relevant to the course)**	**Salient Features**
AV-1	https://www.youtube.com/watch?v=PIqrPYFKU9I	Creating Basic Package With SSIS

Software/Equipments/Databases		
Sr No	**(S/E/D) (only if relevant to the course)**	**Salient Features**
SW-1	https://www.kaggle.com/datasets	For large size datasets

*Each experiment of the lab will be evaluated using following relative scheme:

Component	Weightage (%)
Performance/Job evaluation/conduct/skill execution/demonstration	50
Viva	50

Detailed Plan For Practicals

Practical No	Broad topic	Subtopic	Other Readings	Learning Outcomes
Practical 1	Introduction to spreadsheets	reference styles		Student will understand the basics of spreadsheets and reference styles
	Introduction to spreadsheets	spreadsheet environment	RW-6	Student will understand the basics of spreadsheets and reference styles
	Introduction to spreadsheets	customizing excel		Student will understand the basics of spreadsheets and reference styles
	Introduction to spreadsheets	basic terminology of excel	AV-1	Student will understand the basics of spreadsheets and reference styles
	Introduction to spreadsheets	object model of excel	SW-1	Student will understand the basics of spreadsheets and reference styles
Practical 2	Introduction to spreadsheets	number formatting		Student will understand the various formatting types of spreadsheet
	Introduction to spreadsheets	custom number formatting		Student will understand the various formatting types of spreadsheet
	Introduction to spreadsheets	format as table		Student will understand the various formatting types of spreadsheet
	Introduction to spreadsheets	conditional formatting		Student will understand the various formatting types of spreadsheet
Practical 3	Spreadsheet functions to organize data	cell reference styles		Student will apply the various techniques and functions over spreadsheet LAB EVALUATION 1----------
	Spreadsheet functions to organize data	date and time functions		Student will apply the various techniques and functions over spreadsheet
	Spreadsheet functions to organize data	creating and working with formulas		Student will apply the various techniques and functions over spreadsheet
	Spreadsheet functions to organize data	text functions	RW-6	Student will apply the various techniques and functions over spreadsheet
	Spreadsheet functions to organize data	text functions	RW-6	Student will apply the various techniques and functions over spreadsheet

Practical 4	Spreadsheet functions to organize data	information and volatile functions		Student will apply the various functions over spreadsheet and understand how to handle the errors
	Spreadsheet functions to organize data	logical and financial functions		Student will apply the various functions over spreadsheet and understand how to handle the errors
	Spreadsheet functions to organize data	error handling		Student will apply the various functions over spreadsheet and understand how to handle the errors
	Spreadsheet functions to organize data	formula auditing		Student will apply the various functions over spreadsheet and understand how to handle the errors
	Spreadsheet functions to organize data	mathematical and statistical functions		Student will apply the various functions over spreadsheet and understand how to handle the errors
Practical 5	Data representation and manipulation	advanced filter for complex criterion		Student will understand the data representation methods like Pivot table and power pivoting
	Data representation and manipulation	filter		Student will understand the data representation methods like Pivot table and power pivoting
	Data representation and manipulation	pivot table and pivot chart		Student will understand the data representation methods like Pivot table and power pivoting
	Data representation and manipulation	sorting and custom sorting		Student will understand the data representation methods like Pivot table and power pivoting
	Data representation and manipulation	power pivot		Student will understand the data representation methods like Pivot table and power pivoting
Practical 6	Data representation and manipulation	import data from different sources into power pivot		Student will apply power pivot over the datasets and also apply DAX functions
	Data representation and manipulation	DAX functions		Student will apply power pivot over the datasets and also apply DAX functions---- LAB EVALUATION-2
	Data representation and manipulation	reducing file size in power pivoting		Student will apply power pivot over the datasets and also apply DAX functions
	Data representation and manipulation	connect to multiple different external datasets		Student will apply power pivot over the datasets and also apply DAX functions
Practical 7	Advanced graphing and charting	views for a worksheet		Student will understand the need of the graphical representation in the spreadsheet by using various graphs
	Advanced graphing and charting	combo charts		Student will understand the need of the graphical representation in the spreadsheet by using various graphs
	Advanced graphing and charting	dynamic charts and dynamic data source for charts print areas		Student will understand the need of the graphical representation in the spreadsheet by using various graphs

Practical 7	Advanced graphing and charting	charts		Student will understand the need of the graphical representation in the spreadsheet by using various graphs
	Advanced graphing and charting	various printing techniques		Student will understand the need of the graphical representation in the spreadsheet by using various graphs
	Advanced graphing and charting	working with objects charts		Student will understand the need of the graphical representation in the spreadsheet by using various graphs
Practical 8	Data protection techniques	workbook protection and encryption		Student will apply various data protection techniques over the dataset
	Data protection techniques	worksheet protection		Student will apply various data protection techniques over the dataset
	Data protection techniques	protect specific range		Student will apply various data protection techniques over the dataset
Practical 9	Multidimensional data	ETL overview	RW-2 RW-3	Student will comprehend the concepts of ETL
	Multidimensional data	extracting data		Student will comprehend the concepts of ETL
	Multidimensional data	transformations		Student will comprehend the concepts of ETL
	Multidimensional data	loading data		Student will comprehend the concepts of ETL----- LAB EVALUATION-3----
Practical 10	Multidimensional data	OLTP and OLAP		Student will understand the process of ETL
	Multidimensional data	simple ETL processing	RW-4	Student will understand the process of ETL
	Multidimensional data	ETL tools		Student will understand the process of ETL
	Multidimensional data	data sources and destinations		Student will understand the process of ETL
Practical 11	Multidimensional data	data cube		Student will comprehend the concepts of multidimensional data and data cube.
	Multidimensional data	grouping sets in T-SQL		Student will comprehend the concepts of multidimensional data and data cube.
	Multidimensional data	multidimensional data models		Student will comprehend the concepts of multidimensional data and data cube.
Practical 12	ETL processing with SSIS	SQL programming for data science		Student will understand the concepts of SQL programming and apply it on datasets
	ETL processing with SSIS	creating SSIS projects		Student will understand the concepts of SQL programming and apply it on datasets----- LAB EVALUATION-4-----
Practical 13	ETL processing with SSIS	data wrangling before the load		Student will implement the ETL process using the SSIS tool and able to perform pre-processing for data analysis.

Practical 13	ETL processing with SSIS	handling errors during ETL	RW-1 RW-4 RW-5	Student will implement the ETL process using the SSIS tool and able to perform pre-processing for data analysis.
	ETL processing with SSIS	uploading data		Student will implement the ETL process using the SSIS tool and able to perform pre-processing for data analysis.
Practical 14	ETL processing with SSIS	data wrangling after the load	SW-1	Student will understand data wrangling , test and deploy the SSIS project
	ETL processing with SSIS	testing and deploying of the project		Student will understand data wrangling , test and deploy the SSIS project
	SPILL OVER			
Practical 15	Spill Over			