POORNIMA
COLLEGE OF ENGINEERING

Approved by AICTE
Affiliated to Rajasthan Technical University, Kota
Recognized by UGC under Section 2(f) of the UGC Act, 1956

Compliance of Metric Level Deviations

Criterion	1- Curricular Aspects
Key Indicator	1.2 Academic Flexibility
Metric ID	1.2.1 Number of Add-on/Certificate/ Value added programs offered during the last five years
Findings of DVV	Provide Summary report of Microsoft Azure Academia Program: Python Programming Microsoft Azure Academia Program: POWER BI DATA ANALYTICS Microsoft Azure Academia Program: Big Data Microsoft Azure Academia Program: Cloud Infrastructure and Security for 2021-22 along with duration and list of students enrolled.

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INDEX

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POORNIMA COLLEGE OF ENGINEERING

Department of Computer Engineering

Even Semester- 2021-22

Add-on Course- Microsoft Azure Academia Program: Python Programming

(AOC-DEP-CSE-AZPY)

Summary Report

COURSE OUTCOMES: After successful completion of this course Students will be able to

S. No.	Course Outcomes
CO1	Apply the programming constructs like variables, data structures and control flow structures
CO2	Develop programs using file handling, Object oriented paradigms, GUI controls
CO3	Demonstrate the use of exception handling, different libraries and database connectivity
CO4	Use Python IDEs like IDLE, Spyder, and PyCharm to develop programs
CO5	Design solutions of real-world computational problems using Python programs

Sr. No.	Particulars	Remark
1.	Year	2nd Year
2.	Semester	III Semester
3.	No of Student Enrolled	75
4.	No of Student certified	71
5.	Overall remark by feedback	Overall Feedback was good. More hands-on sessions needed.
6.	Action to be taken for future batch	Mini projects may be part of the course. Introduction to machine learning may be added in the course curriculum.

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Department of Computer Engineering
Session- 2021-22
Add-on Course- Microsoft Azure Academia Program: Python Programming
(AOC-DEP-CSE-AZPY)
Module-Wise Course Contents and Course Duration

Total course duration: 36 Hours

WEEK	MODULE-WISE CONTENTS
WEEK – 1 (3 Hours)	**MODULE – 1: An Overview of Python** • What is Python? • Interpreted languages • Advantages and disadvantages • Downloading and installing • Which version of Python • Where to find documentation
WEEK – 2 (3 hours)	**MODULE – 2: The Python Environment** • Structure of a Python script • Using the interpreter interactively • Running standalone scripts under Unix and Windows • Using variables • String types: normal, raw and Unicode • String operators and expressions • Math operators and expressions • Writing to the screen • Command line parameters • Reading from the keyboard • About flow control • Indenting is significant • The if and elif statements • while loops • Using lists • Using the for statement • The range () function
WEEK – 3 (3 hours)	**MODULE – 3: Getting Started** • Using variables • String types: normal, raw and Unicode • String operators and expressions • Math operators and expressions • Writing to the screen

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	• Command line parameters Reading from the keyboard • list operations • list methods • Strings are special kinds of lists tuples • Array Types
WEEK – 4 **(3 hours)**	**MODULE – 4: Flow Control** • About flow control • Indenting is significant • The if and elif statements • while loops • Using lists • Using the for statement • The range () function **Dictionaries and Sets** • Dictionary overview • Creating dictionaries • Dictionary functions • Fetching keys or values • Testing for existence of elements • Deleting elements • Sets And Frozen Sets **Functions** • Syntax of function definition • Formal parameters • Global versus local variables • Passing parameters and returning values
WEEK – 5 **(3 hours)**	**MODULE-5: Python Data Frames I** • Analysis, selection, and visualization techniques with Pandas Data Frames • Extracting and transforming Data Frames **MODULE-6: Python Data Frames II** • Advanced indexing • Rearranging and reshaping data Multiple keys
WEEK – 6 **(3 hours)**	**MODULE-7: Modules and Packages** • What is a module? • The import statement • Function aliases • Packages • RE Objects • Pattern matching • Parsing data • Sub expressions • Complex substitutions • RE tips and tricks

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WEEK-7 **(3 Hours)**	**MODULE-8: Dictionaries and Sets** • Dictionary overview • Creating dictionaries • Dictionary functions • Fetching keys or values • Testing for existence of elements • Deleting elements • Sets And Frozen Sets **Importing Data in Python** • Import data into Python from flat files such as .txt and .csv • Import data into Python from files native to other software such as Excel spreadsheets, Stata, SAS, and MATLAB files • Importing Data in Python from files from relational databases such as SQLite and PostgreSQL
WEEK – 8 **(3 Hours)**	**MODULE-9: Functions** • Syntax of function definition • Formal parameters • Global versus local variables
WEEK 9 **(3 Hours)**	**MODULE-10 Importing Data in Python** • Import data into Python from flat files such as .txt and .csv • Import data into Python from files native to other software such as Excel spreadsheets, Stata, SAS, and MATLAB files Importing Data in Python from files from relational databases
WEEK10 **(3 Hours)**	**MODULE-11** • Creating Pig and Hive UDF in Python • Deploying Python for Map Reduce programming
WEEK11 **(3 Hours)**	**MODULE-12** **Environment for scientific programming in Python** • Jupiter Notebook as an environment for scientific programming in Python, its structure and features.
WEEK 12 **(3 Hours)**	Passing parameters and returning values 1. **CERTIFCATION EXAMINATION** 2. **CLOSING AND VALEDICTORY CEREMONY**

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Department of Computer Engineering		
B. Tech. (Computer Engineering)		
Add-On Course - Microsoft Azure Academia Program: Python Programming (AOC-DEP-CSE-AZPY)		
Enrolled Student List (Session 2021-22) - II Year		
S. No.	**Enrolment ID / College ID**	**Name of the Student**
1	PCE20CS001	AARADHAYA KHANDELWAL
2	PCE20CS009	ADITYA KUMAR
3	PCE20CS011	ADITYA NAIR
4	PCE21CS806	AKHILESH SAINI
5	PCE20CS013	AMAN CHOUBEY
6	PCE20CS014	AMAN GOYAL
7	PCE20CS020	ANJALI GARG
8	PCE20CS026	ANUPAM ANAND
9	PCE20CS027	ANURAG KUMAR
10	PCE20CS028	ANUSH JAIN
11	PCE20CS030	ARPIT GUPTA
12	PCE20CS031	ARYAN NAMA
13	PCE21CS812	ASHRAF ABDULLAH
14	PCE20CS035	AVINASH DUBEY
15	PCE20CS039	AYUSHI GUPTA
16	PCE20CS041	BHAVIT CHAUDHARY
17	PCE20CS042	BHAVYA AGARWAL
18	PCE20CS049	DEEPAK KUMAR TIWARI
19	PCE20CS051	DEVENDRA SINGH RAO
20	PCE20CS053	DHRUV GAUR
21	PCE20CS054	DIVYANSH AGARWAL
22	PCE21CS807	DIWAKAR JANGID
23	PCE20CS205	GARVIT MATHUR
24	PCE20CS067	GUNANK BANSAL
25	PCE20CS069	HARSH JAIN
26	PCE20CS070	HARSH RATHORE
27	PCE20CS076	HARSHUL NAMDEV
28	PCE20CS080	HITESH KUMAR KALWANI

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29	PCE20CS301	ISHANT KUSHWAH
30	PCE20CS083	JATIN SINSINWAR
31	PCE20CS084	JAY SINGH SHEKHAWAT
32	PCE20CS093	KSHITIJ KANNAUJIYA
33	PCE20CS095	LAKSHYA RAJ SINGH PANWAR
34	PCE20CS096	LALIT KUMAR
35	PCE20CS102	MANAV SINGH PANWAR
36	PCE20CS107	MAYANK SINGH
37	PCE20CS108	MEGHA AGRAWAL
38	PCE20CS109	MOHIT JESWANI
39	PCE20CS111	MS KRATIKA JANGID
40	PCE20CS112	MS. GUNGUN .
41	PCE20CS209	MS.TARANA BAGOTIA
42	PCE20CS124	MUDIT AGRAWAL
43	PCE20CS123	MUDIT AGRAWAL
44	PCE20CS206	NARENDRA KUMAWAT
45	PCE20CS132	NIKHIL SINGHAL
46	PCE20CS134	NIRANJAN SHARMA
47	PCE20CS137	NITU PANDEL
48	PCE20CS141	PIYUSH MISHRA
49	PCE20CS142	PRABHAT SINGH
50	PCE20CS144	PRADEEP SAIN
51	PCE21CS802	PRADHUMAN SINGH RATHORE
52	PCE20CS149	PRIYANSHU SHARMA
53	PCE20CS152	RAHUL KHANDELWAL
54	PCE20CS153	RAJ SINGH NARUKA
55	PCE20CS705	RAMESHBER GOSWAMI
56	PCE21CS813	RINKU SAINI
57	PCE20CS155	RISHABH JAIN
58	PCE20CS156	RISHAV VERMA
59	PCE20CS162	SAHIL TANK
60	PCE21CS810	SAJAL KUMAR
61	PCE20CS166	SANSKAR SHARMA
62	PCE20CS167	SARTHAK BHARDWAJ
63	PCE20CS168	SATYAM SHANDILYA
64	PCE20CS174	SHIVAM KHANDELWAL

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65	PCE20CS176	SHIVAM PATIL
66	PCE20CS179	SHRISHTI AGARWAL
67	PCE20CS180	SHUBHAM PRAJAPATI
68	PCE20CS183	SILKY SHARMA
69	PCE20CS185	TANU AGARWAL
70	PCE20CS187	TRIPTI AGRAWAL
71	PCE20CS188	TRIPTI SOMANI
72	PCE20CS190	TUSHAR VAISHNAV
73	PCE20CS191	UTKARSH KAUSHIK
74	PCE20CS194	VISHAL AGRAWAL
75	PCE20CS201	YASH VARDHAN SINGH PANWAR

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Department of Computer Engineering

Even Semester- 2021-22

Add-on Course- Microsoft Azure Academia Program: POWER BI "DATA ANALYTICS"

(AOC-DEP-CSE-AZBI)

Summary Report

COURSE OUTCOMES: After successful completion of this course Students will be able to

S. No.	Course Outcomes
CO1	Student should be able to apply the basic knowledge of data mining, SQL and Data visualization.
CO2	Student should be able to analyze the queries, functions, techniques and Modeling of data.
CO3	Student should be able to design Dashboard and workspace by extracting and visualizing datasets.
CO4	Student should be able to create a dataset and based on that dataset design dashboard by extracting data.

Sr. No.	Particulars	Remark
1.	Year	3rd Year
2.	Semester	V-VI Semester
3.	No of Student Enrolled	70
4.	No of Student certified	69
5.	Overall remark by feedback	Power BI is a great tool for Visualization and reporting. Students basically use this tool as a means of analysing the maintenance data base. Because of this tool student can easily be able to find out the insights and bottle necks in data.
6.	Action to be taken for future batch	Introduction of some new data visualization/ analytics tools like Tableau may be provided to the students.

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Department of Computer Engineering

Even Semester- 2021-22

Add-on Course- Microsoft Azure Academia Program: POWER BI "DATA ANALYTICS" (AOC-DEP-CSE-AZBI)

Module-Wise Course Contents and Course Duration

Total course duration: 36 Hours

WEEK	MODULE-WISE CONTENTS
WEEK – 1 (3 Hours)	**MODULE – 1: SQL SERVER INTRODUCTION** • Data, Databases and RDBMS Software • Database Types: OLTP, DWH, OLAP • Microsoft SQL Server Advantages, Use • BI Components, Data Science Components • ETL, MSBI and Power BI Components
WEEK – 2 (3 hours)	**MODULE-2: Introduction to Power BI** • Power BI Job Roles in Real-time • Power BI Data Analyst Job Roles • Business Analyst - Job Roles • Power BI Developer - Job Roles • Power BI for Data Scientists • Power BI Training: Lab Plan • Understanding the Power BI Tools
WEEK – 3 (3 hours)	**MODULE-3: Basic Report Design** • Power BI Desktop Installation • Data Sources & Visual Types • Get Data and Memory Tables • In-Memory xvelocity Database • Table and Tree Map Visuals • Format Button and Data Labels • Visual Interaction, Data Points • CSV and PDF Exports. Tooltips • Power BI EcoSystem, Architecture
WEEK-4 (3 Hours)	**MODULE-4: Visual Sync, Grouping** • Slicer Visual: Real-time Usage • Orientation, Selection Properties • Single & Multi Select, CTRL Options • Slicer: Number, Text and Date Data • Slicer List and Slicer Dropdowns • Visual Sync Limitations with Slicer

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	• Grouping: Real-time Use, Examples • Grouping Static / Fixed Data Values • Grouping Dynamic / Changing Data • Grouping Binned Data, Classification
WEEK-5 **(3 Hours)**	**MODULE-5: Hierarchies, Filters** • Creating Hierarchies in Power BI • Independent Drill-Down Options • Dependent Drill-Down Options • Conditional Drilldowns, Data Points • Drill Up Buttons and Operations • Filters: Types and Usage in Real-time • Visual Filter, Page Filter, Report Filter • Basic, Advanced and TOP N Filters
WEEK–6 **(3 hours)**	**MODULE-6: Bookmarks, Azure, Modeling-I** • Drill-thru Filters, Page Navigations • Bookmarks for Visual Filters • Bookmarks for Page Navigations • Buttons, Images with Actions • Bookmarks View & Selection Pane **MODULE-7: Bookmarks, Azure, Modeling-II** • Azure Database Access, Reports • Import & Direct Query with Power BI • SQL Queries and Enter Data • Data Modeling: Currency, Relations
WEEK–7 **(3 hours)**	**MODULE-8: Visualization Properties-I** • Stacked Charts and Clustered Charts • Line Charts, Area Charts, Bar Charts • 100% Stacked Bar & Column Charts • Map Visuals: Tree, Filled, Bubble • Cards, Funnel, Table, Matrix • Scatter Chart: Play Axis, Labels • Series Clusters & Selections
WEEK–8 **(3 hours)**	**MODULE-9: Visualization Properties-II** • Waterfall Chart and ArcGIS Maps • Info graphics, Icons and Labels • Color Saturation, Sentiment Colors • Column Series, Column Axis in Lines • Join Types: Round, Bevel, Miter • Shapes, Markers, Axis, Plot Area
WEEK-9 **(3 Hours)**	**MODULE–10: Power Query** • Power Query M Language Purpose • Power Query Architecture and ETL • Data Types, Literals and Values • Power Query Transformation Types • List, Record and Table Structures • Get Data, Table Creations and Edit

	• Group By and Advanced Options • Aggregations with Power Query • Replace Nulls: Fill Up, Fill Down • Extract, Format and Numbers • Removing Columns and Duplicates • Testing Parameters and PBI Canvas • Converting Lists to Table Data • Data Type Conversions, Expressions • Data Type Conversions, Expressions
WEEK-10 **(3 Hours)**	**MODULE–11: DAX Functions** • DAX: Importance in Real-time • DAX Architecture, Entity Sets • ROW Context and Filter Context • Creating, Using Measures with DAX • Dynamic Expressions, IF in DAX • Data Modeling Options in DAX • Detecting Relations for DAX • Modeling: Missing Relations • Logical, Mathematical Functions • Connection with CSV, MS Access
WEEK-11 **(3 Hours)**	**MODULE-12: Power BI Service & Power BI Mobile** • Why Power Bi Service? • Comparison Power BI Free & Premium • Logging into Power Bi Service • Importing data from Desktop to Service • Dataset menu • Working on reports • Dashboard overview • Workspace & Gateways • Power Bi Mobile Overview • Excluding dataset from sharing
WEEK-12 **(3 Hours)**	**1. CERTIFCATION EXAMINATION** **2. CLOSING AND VALEDICTORY CEREMONY**

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Department of Computer Engineering		
B. Tech. (Computer Engineering)		
Add-On Course - Microsoft Azure Academia Program: POWER BI "DATA ANALYTICS" (AOC-DEP-CSE-AZBI)		
Enrolled Student List (Session 2021-22) - III Year		
S. No.	**Enrolment ID / College ID**	**Name of the Student**
1	PCE19CS009	ABHISHEK PATIDAR .
2	PCE19CS011	ABHISHEK SHARMA
3	PCE19CS101	ABHISHREE MUNDRA
4	PCE19CS012	ADITI KATARA
5	PCE19CS020	ANKUSH YADAV
6	PCE19CS022	ANUSHKA SHARMA
7	PCE19CS023	ANUSHKA SHARMA
8	PCE19CS024	APREKSHA MATHUR
9	PCE19CS026	ARJUN JAIN
10	PCE19CS027	ARJUNKUMAR CHOUDHARY
11	PCE19CS002	AYUSH KUMAR SRIVASTAV.
12	PCE19CS034	AYUSH SAXENA
13	PCE19CS037	BHAWNA GUPTA
14	PCE19CS039	BHUPESH KUMAR MANUJA
15	PCE19CS040	CHANDAN SINGH TANWAR .
16	PCE19CS047	DEV KALRA
17	PCE19CS049	DEVESH KUMAR SINGH
18	PCE19CS052	DIKSHANT MATHUR .
19	PCE19CS053	DISHA SARASWAT
20	PCE19CS300	ESHIKA MITTAL.
21	PCE19CS061	GAURAV TANK .
22	PCE19CS065	HARDIK SINGH .
23	PCE19CS066	HARSH SHARMA
24	PCE19CS067	HARSH UPADHYAY
25	PCE19CS070	HEMRAJ .
26	PCE19CS071	HIMANSHU KARN
27	PCE19CS077	JASWANT MEHTA
28	PCE19CS081	KUNAL LAL PAWA
29	PCE19CS083	KUSHAGRA AGRAWAL
30	PCE19CS084	LAVESH GARG
31	PCE20CS806	MANVENDRA CHATURVEDI
32	PCE19CS093	MINALI GUPTA
33	PCE19CS095	MOHAN KUMAR SINGH
34	PCE19CS097	MOHIT DHANOTIYA
35	PCE19CS098	MOHIT KUMAR KANDOI
36	PCE19CS109	NARENDRA SINGH

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38	PCE19CS114	NIKHIL SHARMA
39	PCE19CS115	NIRBHAY VISHWANATH
40	PCE19CS117	NITIN TAYAL
41	PCE19CS118	NITISH KUMAR GUPTA
42	PCE19CS125	PRABIN .
43	PCE19CS130	PRIYANSH SHARMA
44	PCE19CS132	PUNIT BALSORA
45	PCE19CS135	RAGHAV MALHOTRA
46	PCE19CS139	RIDHVI KULSHRESTHA
47	PCE19CS140	RISHI GOYAL
48	PCE19CS141	RIYA BHARGAVA
49	PCE19CS143	RIYA SHARMA
50	PCE19CS144	ROHIT MATHUR
51	PCE19CS150	SAGAR TANEJA
52	PCE19CS155	SATYAM KUMAR
53	PCE19CS157	SAURABH KANTH
54	PCE19CS158	SAURABH KUMAR
55	PCE19CS160	SAURABH PANSARI
56	PCE19CS162	SAYAN KHANDAIT
57	PCE19CS506	SHAGUN SHARMA
58	PCE19CS168	SHUBHAM MATHUR
59	PCE19CS172	SOHAIL KHAN
60	PCE19CS174	SUMIT KUMAR
61	PCE19CS175	SUMIT NAYAK
62	PCE19CS183	TEJASVI SAXENA
63	PCE19CS185	UJJWAL MAHESHWARI
64	PCE19CS187	UTKARSH DUBEY
65	PCE19CS188	UTKARSH PALIWAL
66	PCE19CS195	VIRENDRA SINGH SISODIA .
67	PCE19CS196	VISHAL KUMAR .
68	PCE19CS201	YASH BANSAL
69	PCE19CS205	YATHARTH PUROHIT
70	PCE19CS207	YUVRAJ SINGH CHOUHAN .

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POORNIMA
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Department of Computer Engineering

Even Semester- 2021-22

Add-on Course- Microsoft Azure Academia Program: Big Data

(AOC-DEP-CSE-AZBD)

Summary Report

COURSE OUTCOMES: After successful completion of this course Students will be able to

S. No.	Course Outcomes
CO1	Get data into Azure Data Lake Storage (ADLS)
CO2	Monitor and optimize the performance of your data lakes
CO3	Create and run a Stream Analytics job
CO4	Scale a Stream Analytics job
CO5	Monitor and troubleshoot errors in Stream Analytics jobs

Sr. No.	Particulars	Remark
1.	Year	3rd Year
2.	Semester	V-VI Semester
3.	No of Student Enrolled	70
4.	No of Student certified	69
5.	Overall remark by feedback	The course was excellent and the classes well taught by the teachers.
6.	Action to be taken for future batch	Case studies on data management/analytics of social networking sites like Facebook, Instagram etc. may be added in the training.

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Department of Computer Engineering

Even Semester 2021-22

Add-on Course- Microsoft Azure Academia Program: Big Data

(AOC-DEP-CSE-AZBD)

Module-Wise Course Contents and Course Duration

Total course duration: 36 Hours

WEEK	MODULE-WISE CONTENTS
WEEK – 1 (3 Hours)	**MODULE – 1: Introduction To Big Data** • Data Storage and Analysis • Characteristics of Big Data • Big Data Analytics • Typical Analytical Architecture • Requirement for new analytical architecture Challenges in Big Data Analytics Need of big data frameworks
WEEK – 2 (3 hours)	**MODULE – 2: Hadoop Framework** • Hadoop • Requirement of Hadoop Framework • Design principle of Hadoop • Comparison with other system • Hadoop Components • Hadoop 1 vs Hadoop 2 • Hadoop Daemon's
WEEK – 3 (3 hours)	**MODULE – 3: HDFS** • HDFS Commands • Map Reduce Programming: I/O formats • Map side join • Reduce Side Join • Secondary sorting, • Pipelining Map Reduce jobs
WEEK – 4 (3 hours)	**MODULE – 4: Hadoop Ecosystem** • Introduction to Hadoop ecosystem technologies: • Serialization: AVRO, • Co-ordination: Zookeeper • Databases: HBase • Hive

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	• Scripting language: Pig • Streaming: Flink • Storm
WEEK – 5 (3 hours)	**MODULE – 5: Spark Framework** • Introduction to GPU Computing • CUDA Programming Model • CUDA API • Simple Matrix • Multiplication in CUDA • CUDA Memory Model • Shared Memory Matrix Multiplication • Additional CUDA API Features.
WEEK – 6 (3 hours)	**MODULE-6: Data Analysis with Spark Shell** • Writing Spark Application • Spark Programming in Scala • Python • R Java - Application Execution.
WEEK-7 (3 Hours)	**MODULE-7: Spark SQL and GraphX** • SQL Context • Importing and Saving data • Data frames – using SQL • GraphX overview • Creating Graph • Graph Algorithms
WEEK-8 (3 Hours)	**MODULE-8: Spark Streaming** • Overview • Errors and Recovery • Streaming Source • Streaming live data with spark
WEEK-9 (3 Hours)	**MODULE-9: Recent Trends in Big Data Analytics** • Latest trends in Big Data Analytics • Data as service • Predictive Analysis • Quantum Computing • Edge Computing • Natural Language Processing • Hybrid Clouds
WEEK-10 (3 Hours)	**MODULE-10: Key roles for New Big Data Ecosystems** • Sensing • Collection • Wrangling • Analysis • Storage

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WEEK-11 (3 Hours)	**MODULE-11: Traditional Business Intelligence versus Big Data** • Inverted Indexing in Spark Sequence alignment problem in Spark • Implementation of Matrix algorithms in Spark Spark Sql programming • Building Spark Streaming application
WEEK -12 (3 Hours)	**1. CERTIFCATION EXAMINATION** **2. CLOSING AND VALEDICTORY CEREMONY**

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1	PCE19CS001	AANCHAL ASNANI
2	PCE19CS003	AAYUSH SHARMA .
3	PCE19CS004	AAYUSHI NARUKA
4	PCE19CS006	ABHINAV SHARMA
5	PCE20CS800	ABHISHEK JAIN
6	PCE19CS008	ABHISHEK SINGHAL .
7	PCE19CS017	AMAN PANDEY
8	PCE19CS019	ANKUR CHAURASIA
9	PCE19CS021	ANURAG KUMAR
10	PCE20CS801	APRAJITA KUMARI
11	PCE20CS802	ARCHITA .
12	PCE19CS028	ARNAB ROY
13	PCE19CS031	ARYAN .
14	PCE20CS803	ASHUTOSH MEENA
15	PCE19CS035	AYUSH SHARMA .
16	PCE19CS036	BHAVESH CHITTORA
17	PCE19CS038	BHUPESH .
18	PCE19CS041	CHETAN AGGARWAL
19	PCE19CS042	CHIRAYU KHANDELWAL .
20	PCE19CS043	DAKSHITA SHARMA
21	PCE19CS045	DEEPAK LAKHOTIA
22	PCE19CS050	DHANANJAY SAINI .
23	PCE19CS057	GARIMA .JAIN
24	PCE19CS060	GAURAV SINGH RATHORE
25	PCE19CS064	GORAV SINGH .
26	PCE19CS072	HIMANSHU PAREEK
27	PCE19CS075	ISHAN JAIN
28	PCE19CS078	KHUSHBU PAREEK
29	PCE19CS080	KULDEEP VAISHNAV
30	PCE19CS082	KUNAL SINGH
31	PCE19CS085	LOVE CHOUBISA
32	PCE19CS087	LUV HIRANI
33	PCE19CS088	MAHAK HINGAR
34	PCE19CS090	MANISH MOTWANI
35	PCE19CS096	MOHD RASHID MERAJ
36	PCE19CS100	MS. AAYUSHI KHANDELWAL
37	PCE19CS106	NALIN JAIN

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38	PCE19CS108	NAMAN KHANDELWAL
39	PCE19CS112	NEHAL JAIN
40	PCE19CS301	NIKITA AGARWAL
41	PCE19CS119	NITISH YADAV
42	PCE19CS123	PINKI .
43	PCE19CS127	PRANJAL YADAV
44	PCE19CS129	PRERNA MUNDRA
45	PCE19CS131	PRIYANSHU SAINI
46	PCE19CS134	RAGHAV AGRAWAL
47	PCE19CS138	RICHA GARG
48	PCE19CS145	ROHIT SHARMA
49	PCE19CS148	SAGAR KHANDELWAL
50	PCE19CS151	SAHIL GUPTA
51	PCE19CS507	SANJAY SINGH
52	PCE19CS156	SAURABH AGRAWAL
53	PCE19CS163	SHAHRIN KHAN .
54	PCE19CS166	SHREY SOMANI
55	PCE19CS169	SIMRAN WADHWANI
56	PCE19CS171	SNEHASIS HAZRA
57	PCE19CS173	SOURABH GUPTA .
58	PCE19CS176	SURAJ SONI .
59	PCE19CS177	SURYANSH OMAR
60	PCE19CS178	SWARAJ KAUSHIK
61	PCE19CS179	SWARN NIRMAL
62	PCE19CS180	TANISHA KHUNTETA
63	PCE19CS186	UMANG DAKH
64	PCE19CS190	VANSHIKA PARIHAR
65	PCE19CS194	VINAYAK GUPTA
66	PCE19CS505	VISHALI GUPTA
67	PCE19CS199	YADUVENDRA SINGH
68	PCE19CS202	YASH KOTHARI .
69	PCE19CS204	YASHVED SHARMA
70	PCE19CS206	YUKTI CHOUDHARY

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POORNIMA COLLEGE OF ENGINEERING

Department of Computer Engineering

Even Semester- 2021-22

Add-on Course- Microsoft Azure Academia Program: Cloud Infrastructure and Security (AOC-DEP-CSE-AZCI)

Summary Report

COURSE OUTCOMES: After successful completion of this course Students will be able to

S. No.	Course Outcomes
CO1	Get data into Azure Data Lake Storage (ADLS)
CO2	Monitor and optimize the performance of your data lakes
CO3	Create and run a Stream Analytics job
CO4	Scale a Stream Analytics job
CO5	Monitor and troubleshoot errors in Stream Analytics jobs

Sr. No.	Particulars	Remark
1.	Year	3rd Year
2.	Semester	V-VI Semester
3.	No of Student Enrolled	65
4.	No of Student certified	65
5.	Overall remark by feedback	The course was excellent and the classes well taught by the Teachers.
6.	Action to be taken for future batch	Practice on licenced Azure platform and preparing students for different Microsoft certifications and per their field of interest.

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POORNIMA
COLLEGE OF ENGINEERING

Department of Computer Engineering
Even Semester- 2021-22
Add-on Course- Microsoft Azure Academia Program: Cloud Infrastructure and Security (AOC-DEP-CSE-AZCI)
Module-Wise Course Contents and Course Duration

Total Course Duration: 36 Hours

WEEK	MODULE-WISE CONTENTS
WEEK – 1 (3 Hours)	**MODULE – 1: Fundamentals of Cloud Computing and Architectural Characteristics.** • Understand what is Cloud computing • Architectural and Technological Influences of Cloud Computing • Understand the Cloud deployment models • Public, Private, Community and Hybrid models • Software as a Service (SaaS) • Platform as a Service (PaaS) • Infrastructure as a Service (IaaS)
WEEK – 2 (3 hours)	**MODULE – 2: - Security Design and Architecture for Cloud Computing.** • Guiding Security design principles for Cloud Computing • Secure Isolation • Comprehensive data protection • End-to-end access control • Monitoring and auditing • Quick look at CSA, NIST and ENISA guidelines for Cloud Security
WEEK – 3 (3 hours)	**MODULE – 3: - Secure Isolation of Physical & Logical Infrastructure.** • Compute, Network and Storage • Common attack vectors and threats • Secure Isolation Strategies • Multitenancy, Virtualization strategies • Inter-tenant network segmentation strategies • Storage isolation strategies
WEEK – 4 (3 hours)	**MODULE – 4: - Data Protection for Cloud Infrastructure and Services.** • Understand the Cloud based Information Life Cycle • Data protection for Confidentiality and Integrity • Common attack vectors and threats • Encryption, Data Redaction, Tokenization, Obfuscation, PKI and Key • Management, Assuring data deletion

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	• Data retention, deletion and archiving procedures for tenant data • Data Protection Strategies
WEEK – 5 (3 hours)	**MODULE-5:- Enforcing Access Control for Cloud Infrastructure based Services** • Understand the access control requirements for Cloud Infrastructure. • Common attack vectors and threats. • Enforcing Access Control Strategies • Compute, Network and Storage. • Authentication and Authorization. • Roles-based Access Control, Multi-factor authentication • Host, storage and network access control options.
WEEK – 6 (3 hours)	**MODULE-6: - Monitoring, Auditing and Management** • Proactive activity monitoring, Incident Response • Monitoring for unauthorized access, malicious traffic, abuse of system privileges, intrusion • detection, events and alerts • Auditing – Record generation, Reporting and Management • Tamper-proofing audit logs • Quality of Services • Secure Management • User management
WEEK-7 (3 Hours)	**MODULE-7: Introduction to Cloud Design Patterns** • Introduction to Design Patterns • Understanding Design Patterns Template • Architectural patterns for Cloud Computing • Platform-to-Virtualization & Virtualization-to-Cloud • Cloud bursting
WEEK-8 (3 Hours)	**MODULE-8: Introduction to Identity Management in Cloud Computing.** • User Identification, Authentication, and Authorization in Cloud • Infrastructure • Be able to understand the concepts of Identity & Access • Management • Single Sign-on • Identity Federation • Identity providers and service consumers • The role of Identity provisioning
WEEK-9 (3 Hours)	**MODULE -9: Cloud Computing Security Design Patterns - I** • Security Patterns for Cloud Computing • Trusted Platform Geo-tagging • Cloud VM Platform Encryption • Trusted Cloud Resource Pools • Secure Cloud Interfaces
WEEK-10	**MODULE-10: Cloud Computing Security Design Patterns - II**

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(3 Hours)	• Security Patterns for Cloud Computing – Network Security, Identity & • Access Management & Trust • Secure On-Premise Internet Access • Secure External Cloud Connection • Cloud Denial-of-Service Protection • Cloud Traffic Hijacking Protection • Automatically Defined Perimeter • Cloud Authentication Gateway
WEEK-11 (3 Hours)	**Module-11: Policy, Compliance & Risk Management in Cloud Computing** • Be able to understand the legal, security, forensics, personal & data privacy issues within Cloud environment • Cloud security assessment & audit reports. • Laws & regulatory mandates • Personal Identifiable Information & Data Privacy • Privacy requirements for Cloud computing (ISO 27018) • Metrics for Service Level Agreements (SLA) • Metrics for Risk Management
WEEK – 12 (3 Hours)	**1. CERTIFCATION EXAMINATION** **2. CLOSING AND VALEDICTORY CEREMONY**

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Poornima College of Engineering		
Department of Computer Engineering		
B. Tech. (Computer Engineering)		
Add-On Course - Microsoft Azure Academia Program: Cloud Infrastructure and Security (AOC-DEP-CSE-AZCI)		
Enrolled Student List (Session 2021-22) - III Year		
S. No.	**Enrolment ID / College ID**	**Name of the Student**
1	PCE19CS007	ABHISHEK AGRAWAL
2	PCE19CS010	ABHISHEK SHARMA
3	PCE19CS014	AISH JOSHI
4	PCE19CS018	AMRIT KUMAR
5	PCE19CS020	ANKUSH YADAV
6	PCE19CS102	ANUBHA GUPTA
7	PCE19CS030	ARNAV SHARMA
8	PCE19CS103	AYUSHI SHARMA
9	PCE19CS046	DEEPESH TOTLA
10	PCE19CS048	DEVANSH SHARMA
11	PCE19CS054	ESHITA CHOUDHARY
12	PCE19CS058	GAURAV PIPADA
13	PCE19CS062	GAUTAM KUMAR
14	PCE19CS063	GAYATRI RUPCHANDANI
15	PCE19CS074	HITESH SHARMA
16	PCE19CS079	KINJAL AGRAWAL
17	PCE19CS091	MANISH SHARMA
18	PCE19CS094	MOHAMMED FAIZAN
19	PCE19CS099	MRIDUL PANDIT
20	PCE19CS107	NAMAN GUPTA
21	PCE19CS110	NEERAJ .
22	PCE19CS111	NEHA SHARMA
23	PCE19CS121	PALLAVI SINGH
24	PCE19CS128	PRASHANSHA SHARMA
25	PCE19CS133	PURU NARESH SONI
26	PCE19CS136	RAJ GUPTA
27	PCE19CS137	RAJAT GUPTA
28	PCE19CS147	SACHIN KHATRI
29	PCE19CS152	SAKSHI KUMARI
30	PCE19CS165	SHIVANG .
31	PCE19CS170	SIYA JAIN
32	PCE19CS181	TANMAYA BHARDWAJ
33	PCE19CS184	UDIT PARIHAR
34	PCE19CS189	VAIBHAV KHUSHALANI
35	PCE19CS198	VISHESH KHANDELWAL
36	PCE19CS203	YASH SHARMA .

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37	PCE20CS805	KRISHNA SHARMA
38	PCE20CS807	MS.PRAGATI BHARDWAJ
39	PCE19CS104	MS.RIYA MODI
40	PCE19CS005	ABHAY AGARWAL
41	PCE19CS015	AKSHAT JAIN
42	PCE19CS016	ALFAIZ KHAN .
43	PCE19CS025	ARIHANT KOTHARI
44	PCE19CS029	ARNAV KULSHRESTHA
45	PCE19CS033	AYRISH JAIN
46	PCE19CS044	DARSHAN BHATT
47	PCE19CS055	GAGAN TYAGI
48	PCE19CS056	GAGAN YADAV
49	PCE19CS069	HARSHVARDHAN .
50	PCE19CS073	HIMANSHU SINGH
51	PCE19CS076	JANVI KUNDNANI
52	PCE19CS089	MANISH KUMAR
53	PCE19CS105	MUKUL KUMAR TIWARI
54	PCE19CS116	NITIN GUPTA
55	PCE19CS120	OM SHARMA
56	PCE19CS124	POORVI GOYAL
57	PCE19CS142	RIYA KUMARI
58	PCE19CS146	RONAK MISHRA .
59	PCE19CS149	SAGAR SAINI
60	PCE19CS161	SAURAV CHAUDHARY
61	PCE19CS164	SHIVAM SHUKLA
62	PCE19CS167	SHUBHAM JACOB
63	PCE19CS192	VIKRANT SHARMA
64	PCE19CS197	VISHESH GARG
65	PCE19CS200	YASH AGARWAL .

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