| Type of Course: Value Added Course | | |
|---|---|---|
| **Course Code: VACA201** | **Title:** Data Science | **Duration:40hrs** |
| **Course offered to- MCA 1st year** | **Course Coordinator:** Mr. Saurabh Kumar | |
| **Course Overview** | This VAC(value added course) is offered by the **Faculty of Computer Applications**. It has 8 modules to complete this course, upon completion you will be awarded a Certificate. In this value added course students will learn how to extract insights from data using statistics and ML techniques, as well as data visualization skills. Students learn to work with popular analysis tools such as python and machine learning frameworks. This course is for all the students studying in the Faculty of Computer Applications. The following are the details. | |
| **Course Prerequisites** | Dedication to learn, Laptop with minimum i3 processor or better ,Comfort with learning mathematics and programming will be required; Understanding of Basic Python Programming Concept and Basics of Mathematics. | |
| **Objectives** | • To provide a strong foundation about Data Science<br>• To understand the use of statistics in data science<br>• To Understand the essential concepts of basic probability<br>• To understand concepts about types of data<br>• To learn the fundamentals of Machine Learning.<br>• To understand concepts of Supervised Learning<br>• To understand basic component of an intelligence system.<br>• To explore applications of Data science.<br>• To understand different types of machine learning algorithms and tools.<br>• To learn how to use machine learning model to solve real world problem. | |
| **Course Outcome** | • Apply the fundamentals of statistics on real world data<br>• List various approaches of Machine Learning.<br>• Use Data Science for personal use<br>• Describe machine learning algorithms to solve the real-world problems.<br>• Develop machine learning models.<br>• Classify data using Logistic regression<br>• Identify appropriate models for solving machine learning problems.<br>• Use of statistical tools to analyze and interpret data accurately<br>• To make informed decisions based on the data | |
| **Module No.** | **Module Title** | **No. of hours (per module)** |
| **Module I** | **Overview of AI, M & DS** | 2 |
| Introduction to Data Science, Machine Learning and AI, Overlap between Data Science, Machine Learning and AI, Applications of Data Science in day to day life | | |
| **Module II** | **Basic understanding about Data** | 2 |
| Data, Types of data: Structured Data, Semi structured data, Unstructured data, presence noise of data | | |
| **Module III** | **Fundamentals of Statistics** | 5 |

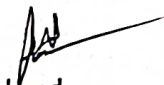Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

...ulty of Computer Applicat...
...vertis University, Bareilly (...

| Introduction, Descriptive Statistics: Mean, Mode, Median, variance, standard deviation, Normal distribution, Binomial Distribution, Sampling, correlation, outliers, Hypothesis testing, P-Value | | |
|---|---|---|
| **Module IV** | **Fundamentals of Probability** | **6** |
| Definition, Important concepts of probability theory including random variables and independence, independent events, mutually exclusive events, collectively exhaustive events, conditional probability, Bayes Theorem, Discrete probability distribution. | | |
| **Module V** | **Foundation of Linear Algebra** | **4** |
| Introduction to linear algebra, notations and definitions, Operations on matrices: additions, subtraction, multiplication, scalar multiplication, vector multiplication, Matrix inversion, transformation, | | |
| **Module VI** | **Python Libraries Required For Data Science** | **7** |
| Numpy: key operations using numpy, **Pandas:** key operations on Data Frames, **Matplotlib:** Visualizing data, creating graphs | | |
| **Module VII** | **Supervised Learning and Linear Regression** | **7** |
| . Difference between supervised, unsupervised and semi-supervised learning and Reinforcement learning, Linear Regression, Loss function, Method of gradient descent | | |
| **Module VIII** | **Classification and Logistic Regression** | **7** |
| Introduction to classification problems and Types of classification - Binary Classification, Multi-Class Classification, Logistic Regression | | |
| **Text Books** | 1. Introduction to Machine Learning with Python: A Guide for Data Scientists, Andreas C. Müller and Sarah Guido, O'Reilly, 2016. | |
| **Reference Books** | 1.Python Cookbook, 3rd Edition by David Beazley (Author), Brian K. Jones (Author) | |
| **Mode of Evaluation** | Quizzes, Class Test | |

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Dean Academics
...rity of Computer Application
...ve tis University, Bareilly ...

Registrar
Invertis University
Bareilly

# Department of Computer Applications

02 Nov 2020

## CIRCULAR

### VALUE ADDED COURSE (Data Science)- MCA
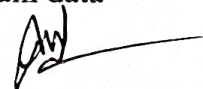
Students of MCA 1st year are hereby informed that value added course "Data Science" is scheduled from 18th November 2020 in your respective classroom, Academic Block-III.

**Schedule:**

- Time Slot: 03:00 PM to 05:00 PM
- Key Speaker: Mr. Saurabh Kumar
- Duration: 2 hrs

## Program Overview:

The objective of this course is to develop python skills of students who are ready to deal with complexities in the computing world and are able to maintain data science skills as per the requirement.

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Mr. Jitendra Choudhary

(HOD)

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

# Data Science

**INVERTIS**
UNIVERSITY BAREILLY

## Organised By:

## FACULTY OF COMPUTER APPLICATIONS

**DATE**
18 Nov- 16 Dec 2020

**TIME**
03 PM TO 05 PM

Head
Department of Computer Applications
Faculty of Computer Applications
HOD Invertis University, Bareilly (UP)
Mr. Jitendra Choudhary

Speaker:
Mr. Saurabh Kumar

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# COURSE OVERVIEW

This course teaches students how to visualise data and extract insights from it using statistics and machine learning approaches. Students also gain experience working with well-known analysis tools including Python and machine learning frameworks.

**HOD**
**MR. JITENDRA CHOUDHARY**

**SPEAKER**
**MR. SAURABH KUMAR**

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)
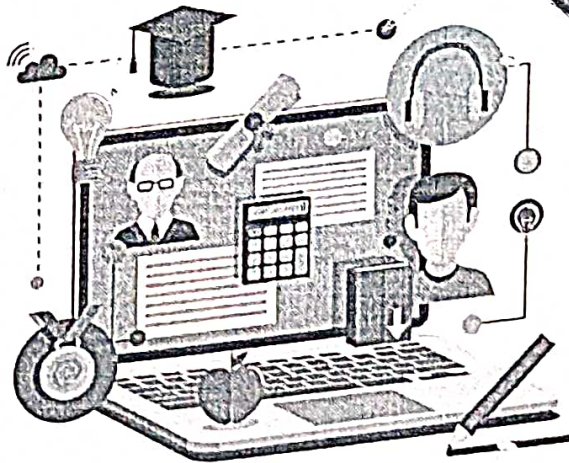
Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# Value Added Course
## Course - Data Science
### Course Code - VACA201
### Duration - 40 hrs

| S.No | Name | Course | Student ID | Year | Nov 18 | 15 | 20 | 23 | 24 | 25 | 26 | 27 | Dec 1 | 2 | 3 | 4 | 7 | 8 | 9 | 10 | 11 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DHARMENDRA KUMAR | MCA | MC2020001 | 2020-21 | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 2 | ZAHIRUDDIN | MCA | MC2020002 | 2020-21 | P | P | P | A | P | A | P | P | P | P | P | P | P | A | P | P | A | P | P | P |
| 3 | MOHD. UROOJ ISMAIL | MCA | MC2020006 | 2020-21 | P | P | P | P | P | P | P | A | P | P | A | P | P | P | A | P | P | P | P | P |
| 4 | SURBHI AGNIHOTRI | MCA | MC2020008 | 2020-21 | P | P | P | P | P | P | P | P | A | P | P | A | P | P | P | P | P | P | P | P |
| 5 | BHANU PRATAP GANGWAR | MCA | MC2020003 | 2020-21 | A | P | P | P | P | P | A | P | P | P | P | P | P | A | P | P | A | P | P | P |
| 6 | AMIT KUMAR VERMA | MCA | MC2020004 | 2020-21 | P | P | A | P | P | P | P | P | P | A | P | P | P | P | P | P | P | A | P | P |
| 7 | SHALINI DEVI | MCA | MC2020005 | 2020-21 | A | P | P | P | P | P | P | P | A | P | P | P | P | P | A | A | A | P | P | P |
| 8 | SHASHANK SHAKYA | MCA | MC2020007 | 2020-21 | P | A | P | P | P | P | P | P | A | P | P | P | A | P | A | P | P | P | A | P |
| 9 | SACHIN SHARMA | MCA | MC2020009 | 2020-21 | P | P | P | A | P | P | P | P | A | P | P | P | P | P | P | P | P | A | P | P |
| 10 | JATIN MISHRA | MCA | MC2020010 | 2020-21 | P | A | P | P | P | A | P | P | P | P | A | P | P | P | A | P | P | P | P | P |
| 11 | ARUN KUMAR MISHRA | MCA | MC2020013 | 2020-21 | P | P | A | P | A | P | A | P | P | P | P | P | P | A | P | P | P | P | P | A |
| 12 | CHIRAG SAXENA | MCA | MC2020015 | 2020-21 | A | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 13 | AFTAB KHAN | MCA | MC2021002 | 2020-21 | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P |
| 14 | MEGHA SINGH YADAV | MCA | MC2020011 | 2020-21 | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 15 | NISHA JAKHAR | MCA | MC2020012 | 2020-21 | P | A | P | P | A | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P |
| 16 | AAYUSH SINGH | MCA | MC2020018 | 2020-21 | A | P | P | P | P | A | P | P | P | A | P | A | P | P | P | P | A | P | P | P |
| 17 | DIYA PUSHPADH | MCA | MC2020019 | 2020-21 | P | P | P | P | P | P | P | P | P | P | P | P | A | P | A | P | P | P | P | A |
| 18 | AKHILESH GANGWAR | MCA | MC2020020 | 2020-21 | A | P | P | P | P | A | P | P | P | P | P | P | P | P | P | A | P | P | P | P |
| 19 | SHOBHIT AGARWAL | MCA | MC2020022 | 2020-21 | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 20 | DESHPAL | MCA | MC2020023 | 2020-21 | P | P | P | P | A | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P |
| 21 | ASHISH GANGWAR | MCA | MC2020014 | 2020-21 | P | P | P | A | P | P | A | P | A | P | A | P | P | P | P | P | P | P | P | P |
| 22 | PARV SAXENA | MCA | MC2020016 | 2020-21 | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P |
| 23 | HARDIK SAXENA | MCA | MC2020021 | 2020-21 | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P |
| 24 | GUNJAN ARORA | MCA | MC2020026 | 2020-21 | P | A | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P |
| 25 | ROHIT SAXENA | MCA | MC2020027 | 2020-21 | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P |
| 26 | SOFIA ANJUM | MCA | MC2020028 | 2020-21 | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | A | A | P | P | P |
| 27 | AMAN SHARMA | MCA | MC2020030 | 2020-21 | P | P | P | P | P | A | P | P | P | A | P | P | P | P | P | P | P | P | P | P |
| 28 | NILOFAR | MCA | MC2020017 | 2020-21 | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | A |
| 29 | NITIN GUPTA | MCA | MC2020032 | 2020-21 | P | A | P | P | P | A | P | A | P | P | P | A | P | P | A | P | P | P | P | P |
| 30 | GANESH | MCA | MC2020033 | 2020-21 | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 31 | AKASH KUMAR | MCA | MC2020034 | 2020-21 | P | P | P | A | P | P | P | P | P | P | P | P | P | A | P | P | A | P | P | P |
| 32 | ANUBHAV RAJ | MCA | MC2020035 | 2020-21 | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | A | P | P | P | P |
| 33 | HIMANSHU GANGWAR | MCA | MC2021001 | 2020-21 | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P |
| 34 | EJAZUL HAQUE | MCA | MC2020024 | 2020-21 | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P |
| 35 | POORVI GULATI | MCA | MC2020025 | 2020-21 | A | P | P | P | A | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P |
| 36 | JITIN KUMAR | MCA | MC2020031 | 2020-21 | P | A | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | A | P | P |

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

| No. | Name | Course | Roll No | Year | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | VAIBHAV SINGH CHAUHAN | MCA | MC2020036 | 2020-21 | P | P | P | P | P | P | A | P | P | P | P | A | P | P | P | P | A | P | P | P |
| 38 | PANKAJ KUMAR | MCA | MC2020029 | 2020-21 | A | P | P | P | P | A | P | A | P | A | P | P | A | P | A | P | P | A | P | P |
| 39 | PRIYA KAPOOR | MCA | MC2020039 | 2020-21 | P | P | P | A | P | P | P | P | A | P | A | P | P | P | P | P | P | P | P | A |
| 40 | DEEPAK | MCA | MC2020038 | 2020-21 | P | A | P | P | P | A | A | P | P | P | P | P | P | P | P | A | P | P | P | P |
| 41 | MOHD BILAL KHAN | MCA | MC2021003 | 2020-21 | P | A | A | P | P | P | P | P | P | A | P | A | P | A | P | P | P | P | P | P |
| No. Of Students Present | | | | | 34 | 33 | 36 | 35 | 37 | 33 | 35 | 36 | 36 | 34 | 35 | 35 | 37 | 32 | 34 | 35 | 34 | 35 | 41 | 37 |

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **DHARMENDRA KUMAR**

of Program ___MCA___ Year/Semester ___I SEMESTER___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of ___COMPUTER APPLICATIONS___

during ___18 November 2020- 16 December 2020___

Head of the Department

Course Coordinator

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **ZAHIRUDDIN**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Dean Academics
Faculty of **Computer Applications**
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __MOHD. UROOJ ISMAIL__
of Program __MCA__ Year/Semester __I SEMESTER__
for successfully completing a value added course
__DATA SCIENCE__
offered by Department of __COMPUTER APPLICATIONS__
during __18 November 2020- 16 December 2020__

Head of the Department

Course Coordinator

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **SURBHI AGNIHOTRI**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Head

Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

INVERTIS
UNIVERSITY BAREILLY

INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __BHANU PRATAP GANGWAR__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

__DATA SCIENCE__

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **AMIT KUMAR VERMA**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020-16 December 2020**

Head of the Department

**Head**
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. _____ **SHALINI DEVI**

of Program _____ **MCA** _____ Year/Semester _____ **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of _____ **COMPUTER APPLICATIONS**

during _____ **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __SHASHANK SHAKYA__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

__DATA SCIENCE__

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. ___**SACHIN SHARMA**___

of Program __**MCA**__ Year/Semester ___**I SEMESTER**___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of ___**COMPUTER APPLICATIONS**___

during ___**18 November 2020 - 16 December 2020**___

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms.  **JATIN MISHRA**

of Program  **MCA**  Year/Semester  **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of  **COMPUTER APPLICATIONS**

during  **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __ARUN KUMAR MISHRA__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

__DATA SCIENCE__

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **CHIRAG SAXENA**

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (U.P)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __AFTAB KHAN__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

__DATA SCIENCE__

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __MEGHA SINGH YADAV__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

__DATA SCIENCE__

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **NISHA JAKHAR**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS

UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **AAYUSH SINGH**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS

UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **DIYA PUSHPADH**

of Program __MCA__ Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly, (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __AKHILESH GANGWAR__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of **Computer Applications**
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. _____**SHOBHIT AGARWAL**_____

of Program ___MCA___ Year/Semester ___I SEMESTER___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of _____**COMPUTER APPLICATIONS**_____

during _____**18 November 2020- 16 December 2020**_____

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS

UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. _____ **DESHPAL**

of Program _____ **MCA** Year/Semester _____ **I SEMESTER**

for successfully completing a value added course _____

**DATA SCIENCE**

offered by Department of _____ **COMPUTER APPLICATIONS**

during _____ **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Ba........

INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **ASHISH GANGWAR**

of Program ___MCA___ Year/Semester ___I SEMESTER___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of ___COMPUTER APPLICATIONS___

during ___18 November 2020- 16 December 2020___

Head of the Department

Course Coordinator

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

Registrar
Invertis University
Bareilly —

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. _____ **PARV SAXENA**

of Program ___ **MCA** ___ Year/Semester _____ **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of _____ **COMPUTER APPLICATIONS**

during _____ **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. _____**HARDIK SAXENA**_____

of Program ___**MCA**___ Year/Semester ___**I SEMESTER**___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of _____**COMPUTER APPLICATIONS**_____

during _____**18 November 2020- 16 December 2020**_____

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. ___**GUNJAN ARORA**___

of Program ___**MCA**___ Year/Semester ___**I SEMESTER**___

for successfully completing a value added course _____

**DATA SCIENCE**

offered by Department of ___**COMPUTER APPLICATIONS**___

during ___**18 November 2020- 16 December 2020**___

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. ___**ROHIT SAXENA**___

of Program ___**MCA**___ Year/Semester ___**I SEMESTER**___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of ___**COMPUTER APPLICATIONS**___

during ___**18 November 2020- 16 December 2020**___

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**Registrar**
Invertis University
Bareilly

Course Coordinator

Dean Academics
**Faculty of Computer Applications**
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. ___**SOFIA ANJUM**___

of Program ___**MCA**___ Year/Semester ___**I SEMESTER**___

for successfully completing a value added course.

**DATA SCIENCE**

offered by Department of ___**COMPUTER APPLICATIONS**___

during ___**18 November 2020- 16 December 2020**___

Head of the Department

Course Coordinator

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **AMAN SHARMA**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course **DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **NILOFAR**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University Bareilly, India

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **NITIN GUPTA**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly

Registrar
Invertis University
Bareilly

Course Coordinator

**INVERTIS**

UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. _____**GANESH**_____

of Program ___**MCA**___ Year/Semester ___**I SEMESTER**___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of _____**COMPUTER APPLICATIONS**_____

during _____**18 November 2020- 16 December 2020**_____

Head of the Department

Course Coordinator

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **AKASH KUMAR**

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**Registrar**
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __ANUBHAV RAJ__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

__DATA SCIENCE__

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Course Coordinator

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **HIMANSHU GANGWAR**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly, (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **EJAZUL HAQUE**

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Course Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (U.P.)

# INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **POORVI GULATI**

of Program ___MCA___ Year/Semester ___I SEMESTER___

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of ___COMPUTER APPLICATIONS___

during ___18 November 2020- 16 December 2020___

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Inveritis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __JITIN KUMAR__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Department of Computer Applications

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS

UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __VAIBHAV SINGH CHAUHAN__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of **Computer** Applications
Invertis University, Bareilly (UP)

INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **PANKAJ KUMAR**

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Head
Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly (UP)

Registrar
Invertis University
Bareilly

Course Coordinator

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. __PRIYA KAPOOR__

of Program __MCA__ Year/Semester __I SEMESTER__

for successfully completing a value added course

__DATA SCIENCE__

offered by Department of __COMPUTER APPLICATIONS__

during __18 November 2020- 16 December 2020__

Head of the Department

Registrar
Invertis University
Bareilly

Course Coordinator

INVERTIS
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. _____ **DEEPAK** _____

of Program __**MCA**__ Year/Semester __**I SEMESTER**__

for successfully completing a value added course _____

**DATA SCIENCE**

offered by Department of __**COMPUTER APPLICATIONS**__

during __**18 November 2020- 16 December 2020**__

Head of the Department

Course-Coordinator

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)

**INVERTIS**
UNIVERSITY BAREILLY

# INVERTIS UNIVERSITY

## CERTIFICATE OF VALUE ADDED COURSE

This Certificate is awarded to Mr./Ms. **MOHD BILAL KHAN**

of Program **MCA** Year/Semester **I SEMESTER**

for successfully completing a value added course

**DATA SCIENCE**

offered by Department of **COMPUTER APPLICATIONS**

during **18 November 2020- 16 December 2020**

Head of the Department

Course Coordinator

Department of Computer Applications
Faculty of Computer Applications
Invertis University, Bareilly

Registrar
Invertis University
Bareilly

Dean Academics
Faculty of Computer Applications
Invertis University, Bareilly (UP)