11th February 2022

Agreement for the Online Certificate Short-Term Courses for Janki Devi Memorial College, Delhi by
Meghnad Desai Academy of Economics, Mumbai

To,

Janki Devi Memorial College, Delhi

Meghnad Desai Academy of Economics (MDAE) is excited to collaborate with Janki Devi Memorial College Delhi for the purpose of jointly offering an online certificate short-term course to the students.

Proposal Details:

1. **Course Duration**: 30 hours duration (20 hours live sessions and 10 hours: assignment and project)
2. **Course Structure**: 10 teaching sessions of 02 hours each
3. **Proposed courses**: The list is mentioned in the annexure at the last
4. **Method of Evaluation**:
   - Attendance requirements: 80% minimum
   - Assignment: 1 Pre-evaluation, 1 post evaluation
   - Project: Case study and Assignment
   - Certificates will be issued to only those candidates who will meet attendance requirements and complete the assignments and projects.
5. **Benefits/ significance of the course:**
- For students:
   - Skill and professional development of the student
   - Certificate for completion of the course
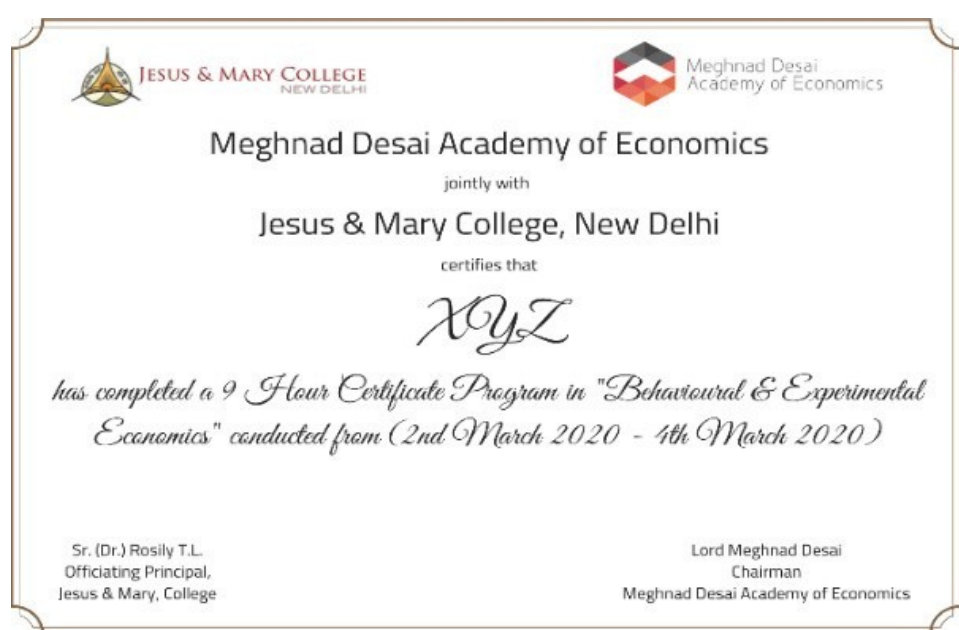   - Connecting with industries for placement & Internships
   - Expert guidance

6. Certification:

As MDAE and Janki Devi Memorial College, Delhi will be jointly offering these courses -
- The certificate will comprise the logo and signature of both institutes. Attached are sample certificates of courses that we have launched with our partners.

6. Fee structure and agreement details:

The course will be offered at a fee of

1) Rs 900/- per student

1) Revenue share with Janki Devi Memorial College, Delhi: 10% of the course base fee

2) Minimum number of students from the college: 30

3) MDAE will be getting students from other colleges as well if the minimum student count is not achieved by the respective college

Fees will be collected by MDAE and Revenue Share will be shared with Janki Devi Memorial College, Delhi immediately after the program, and MDAE will be responsible for paying the GST part for the whole revenue.

7. What will the agreement entail?

- **Responsibilities of MDAE:**

1. Design and delivery of the content of the entire program for all students (one of the course below)Course: 30 hours (20 hours online live teaching, 10 hours of assignments and live project).
2. Sourcing and on-boarding of faculty.
3. Providing the online delivery infrastructure (Zoom, EZ Talks).
4. Designing and distribution of e-certificates.

- **Responsibilities of Janki Devi Memorial College, Delhi**
  - Distribute the course to students (open to students outside of the college of Janki Devi Memorial College, Delhi

8. Payment Mode & Methods

1) Payment will be collected from Student/ College before the start of the course

2) Mode of Payment

- Payment by students through Razorpay Link
- Payment collected by college and then Transferred to MDAE Account
- GST Invoice will be provided

Other Details-

- *Course Name*-Python Programming
- *Number of Students required*- *30*
- *Course Timeline*- 19th Feb 2022- 17th April 2022
- *Course Duration*- 30 hours (20 hours teaching and 10 hours: assignment and project)
- *Course Objective*- The course will introduce participants to the general principles of programming as also serve as a detailed introduction to the Python programming language. Participants will learn how to code in Python. It will serve as the first crucial step toward a career in data analysis and data science.
- .*Course Structure*- Python Programming

Topic 01-

- A logical view of your computer
  - What does it mean to write a computer program?
  - What are the basic things that a computer program does?
- Integrated Development Environments (IDEs)
  - Commonly used Python IDEs
  - The IDLE IDE
- A simple program in Python
  - Printing to the screen
  - Accepting input from the keyboard
  - Saving the python program as a source code file
  - The instructor will develop the code in class
  - We will inspect the code and identify various components therein
    - Variables
    - Data types
    - Constants
    - Arithmetic expressions
    - The assignment operator
    - Python functions
- The three common ways to run your Python code
  - Running code in the IDLE shell
  - Running a source code file from IDLE
  - Running a source code file from the command prompt

Topic 02-

- Basic Python data types and variables
  - Integer
  - Float
  - String
  - Boolean
  - Declaring variables of the above types
  - The Python type function
  - Return to the logical view of your computer's memory to understand variable allocation
  - Understanding the need for the NoneType in Python
- An in-depth look at the boolean type
- Python operators
  - Arithmetic operators
  - Relational operators
  - Assignment operators
  - Logical operators
  - Identity operators
  - Binary (bitwise) operators

Topic 03-

- Python in-built functions – an introduction
  - The Python print function
  - The Python input statement
  - sys.argv
- The string data type
  - String indexing
  - String functions
  - Unicode strings
  - Escape sequences in strings

Topic 04-

- The if statement
  - What is an if statement
  - The philosophy behind an if statement
  - Variations and nuances of the if statement
    - if
    - if…else
    - if…elif…else
    - Nested if's
  - A practical example demonstrating if statements and their usage
- Python in-built functions
  - abs, float, int, len, str, max, min, print, input, range, round, sorted, sum, asci, chr, list, set, type, any, all, math.pow, math.sqrt, math.factorial, math.trunc, math.pi

Topic 05-

- The Python list type
  - Iterable types
  - Subscriptable/indexable types
  - Mutable type
  - The list data type
  - Creation of lists, list comprehension
  - List type methods

Topic 06-

- Programming Loops
  - Why do we need to code loops
  - For loops
  - While loops
  - Termination of loops, the break statement
  - The continue statement
  - Develop a Python program to implement a loop

Topic 07-

- Functions
  - Defining your own functions
    - Function declaration
    - Function name
    - Function arguments
    - Named and unnamed arguments
    - Function body
    - Return value(s)
  - Organizing your code
    - Placing your functions in distinct source code files (packages)
  - Develop a Python program using a function we will create

Topic 08-

- The NumPy package
  - Numpy arrays
  - Numpy mathematical functions

Topic 09-

- The pandas package
  - Working with excel and csv files in Python
  - Importing data from an excel sheet into Python and exporting data from Python to excel
  - Assigning column names, extracting individual rows and columns
  - Dealing with missing data
  - Summarizing data

Faculty Details -Pravesh S. Tiwari (Manager in L&T Financial Services)

A diligent data scientist, silent visualizer and an enthusiastic programmer with 5+ years of experience in building machine learning models data processing and scripting in different programming languages including R and Python. Pravesh loves to analyze data using different models to furnish valuable insights.

8. About MDAE

Meghnad Desai Academy of Economics (MDAE) is a post-graduate academy started by some of India's leading economists and financial professionals. MDAE was established in the year 2015 with the objective of training students to take up roles as market economists, data scientists, bankers, consultants, and policy experts in the real world. Our board comprises Lord Meghnad Desai (Life Peer, House of Lords), Dr. Ajit Ranade (Chief economist, Birla Group), Tushar Poddar (Macro Strategist, Wellington Management), Niranjan Rajadhyaksha (Research Director, IDFC Institute), PD Singh (MD, JP Morgan) and Mangal Goswami (Deputy Director, IMF).

Over the past 5 years, we have graduated over 130 students, who have found tremendous success in the corporate world. Students have been hired in the analytics space (Mu Sigma, Fractal Analytics, Think Analytics, Edelweiss Tokio), in Finance (Morgan Stanley, Deutsche Bank, RBS, JP Morgan), in consulting (Deloitte, Praxis, EY, JLL), and public policy (IDFC Institute, RBI, Gateway house). We are indeed excited to potentially partner with you to jointly deliver these courses and we look forward to positively hearing back.

Thanks & Regards,

For Janki Devi Memorial College

Mr. Prashant Lad
Head- Institutional Programs

Prof. Swati Pal, Principal,
Janki Devi Memorial College