Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act 1956)

CIRCULAR

14.12.2017

The School of computing, Bharath Institute of Higher Education and Research is planned to conduct a certification value added course on **Python for Data Science and AI** for the benefit of II, III and IV year students. This course is scheduled from **18.12.2017** for 30 hours which includes theory and practical. The timings are 4:00 PM to 5:00 PM from Monday to Saturday.

All registered students must attend all the classes without fail. The following faculty members are assigned to handle the course. S.NO	**Name of the Faculty**	**Designation**
1	Mrs.C.Geetha	Assistant Professor
2	Mrs.Anuradha	Assistant Professor

Head of Department

To

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HEAD OF DEPARTMENT
Department of Computer Sci... Engg.,
Bharath Institute of Higher Educatio... Research
(Declared as Deemed to be University U/S 3 of UGC Act, 1956)
Chennai-600 073. INDIA

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PYTHON FOR DATA SCIENCE AND AI

Date of Introduction of the Course: 18.12.2017

The timings are 4:00 PM to 5:00 PM from Monday to Saturday.

Time Table & Lesson plan

CLASS	DATE	TOPIC
1	18.12.2017	**1.Introduction:** Introduction to the data science- Process and value of data science
2	19.12.2017	Statistical Concepts
3	20.12.2017	Basic Techniques
4	21.12.2017	Machine Learning And Modeling
5	22.12.2017	**2. Python Basics**: Basics of Python
6	23.12.2017	Arrays, Strings
7	26.12.2017	Lists, Tuples
8	27.12.2017	Dictionary, Sets
9	28.12.2017	Range Control structures
10	29.12.2017	Scripts and Functions
11	30.12.2017	Graphs in python
12	02.01.2018	**3. Jupyter:** Jupyter notebooks opensource -data cleaning- data transformation
13	03.01.2018	Numerical simulation, statistical modelling
14	04.01.2018	Data visualization and machine learning
15	05.01.2018	**4.Numpy:** Numpy opensource, data manipulation,
16	06.01.2018	Data processing in arrays,
17	08.01.2018	numpy machine learning concepts and standard library
18	09.01.2018	**5.Pandas:** Introduction to Pandas, import data into spyder,
19	10.01.2018	Creating copy of original data, attributes of data, indexing and selecting data
20	11.01.2018	Pandas with data -csv, excel, sql or even a webpage
21	12.01.2018	**6.Visualization:** Data pre-processing and analysis, data exploration and visualization
22	18.01.2018	Parallel and distributed computing in case of bigdata

23	**19.01.2018**	**7.Exploring Data Analysis:** Frequency table, Two way table, two way table-joint probability
24	**20.01.2018**	Marginal probability and conditional probability
25	**22.01.2018**	**8. Machine Learning**: Basics of machine learning, Supervised and unsupervised algorithms
26	**23.01.2018**	K- mean clustering, sci-kit library for machine learning
27	**24.01.2018**	**9.Working with Text and Databases:** Sequence data methods, sequence data operations
28	**25.01.2018**	Natural Language Processing and how to apply those ideas using the Natural Language Processing Toolkit (NLTK) library
29	**27.01.2018**	**10.Final Project:** Project Title: Driver drowsiness detection- Data analysis, collect dataset
30	**29.01.2018**	Data munging, visualize the data, draw conclusions, and present the results

COURSE COORDINATOR

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COURSE OBJECTIVES

In this course we plan to give students an overview of the field of Python with Data Science, AI and in-depth study into its enabling technologies and main building blocks. Students will gain hands-on experience in solving relevant problems through projects that will utilize existing Python tools. It is our objective that students will develop the skills needed to become a practitioner or carry out research projects in this domain.

Specifically, the course has the following objectives:

Students will learn

1) Basic process of data science
2) Python and Jupyter notebooks
3) An applied understanding of how to manipulate and analyse inaccurate datasets
4) Basic statistical analysis and machine learning methods
5) How to effectively visualize results

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PYTHON FOR DATA SCIENCE AND AI

Date of Introduction of the Course: 18.12.2017

COURSE SYLLABUS

1. **Introduction**:

   Introduction to the data science- Process and value of data science-statistical concepts- basic techniques-machine learning and modeling.

2. **Python Basics**:

   Basics of Python, Arrays, Strings, Lists, Tuples, Dictionary, Sets, Range Control structures, Scripts and Functions, Graphs in python.

3. **Jupyter**:

   Jupyter notebooks opensource -data cleaning- data transformation, numerical simulation, statistical modelling, data visualization and machine learning.

4. **Numpy:**

   Numpy opensource, data manipulation, data processing in arrays, numpy machine learning concepts and standard library.

5. **Pandas:**

   Introduction to Pandas, import data into spyder, creating copy of original data, attributes of data, indexing and selecting data, pandas with data -csv, excel, sql or even a webpage.

6. **Visualization:**

   Data pre-processing and analysis, data exploration and visualization, parallel and distributed computing in case of bigdata.

7. **Exploring Data Analysis:**

   Frequency table, Two way table, two way table- joint probability, marginal probability and conditional probability.

8. **Machine Learning**:

   Basics of machine learning, Supervised and unsupervised algorithms, K- mean clustering, sci-kit library for machine learning.

9. **Working with Text and Databases:**

   Sequence data methods, sequence data operations, Natural Language Processing and how to apply those ideas using the Natural Language Processing Toolkit (NLTK) library.

10. **Final Project:**

    Project Title: Driver drowsiness detection- Data analysis, collect dataset, data munging, visualize the data, draw conclusions, and present the results.

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PYHTON FOR DATA SCIENCE AND AI

Date of Introduction of the Course: 18.12.2017

School of Computing

Registered Students Name List

S.NO	REG NO	NAME
1	U14CS005	ABDUR RASEED
2	U14CS007	ABHISHEK MANDURI
3	U14CS010	AKHIL REDDY.G
4	U14CS012	AMAR BASUMATARY
5	U14CS013	ANDREW JOSEPH.V
6	U14CS014	ANGELIN .R
7	U14CS015	ANKITA
8	U14CS016	ANNILKRISHNAN .K
9	U14CS036	CHARAN.G
10	U14CS057	GOVIND KUMAR
11	U14CS059	HARISH.V
12	U14CS066	KARAN KUMAR CHETTRI
13	U14CS078	KODALI AKHIL
14	U14CS084	LAKKAMPALLY SHIVA KUMAR
15	U14CS085	LAKSHMI PRIYA.A
16	U14CS086	LOKESHWARAN.A.
17	U14CS092	MANDELA SAIKIRAN
18	U14CS094	MANISH SHARMA
19	U14CS099	MEKA VIVEK REDDY
20	U14CS110	NAGA TEJA.K
21	U14CS114	NANDALA SWETHA
22	U14CS124	PARVATHA NIRANJAN REDDY
23	U14CS126	PAYAL SINGH
24	U14CS130	POOJA KUMARI
25	U14CS131	PRAGYA ADITI
26	U14CS136	RAHUL GOUD.P
27	U14CS142	RAJA S.V
28	U14CS180	SABUJ BARMAN
29	U14CS186	SURIYA.A.
30	U14CS193	THEJA.T
31	U15CS001	ABHIJEET KUMAR
32	U15CS002	ABHIJIT KUMAR GUPTA
33	U15CS003	ABHISHEK KUMAR SINGH
34	U15CS006	ANBUMANI S

35	U15CS007	ANJAR ALI
36	U15CS015	ARYAN SAHU
37	U15CS022	BHARATH K
38	U15CS027	BODA AKHIL WESLEY
39	U15CS028	BONALA SRIDHAR RAO
40	U15CS044	DIVYA VANI T
41	U15CS053	GLADSON J
42	U15CS072	JOTHI R
43	U15CS068	JAICHAND KUMAR
44	U15CS069	JANAKI RAMAN V
45	U15CS083	KANDI MOUNIKA
46	U15CS084	KANDUKURI JESHWANTH
47	U15CS085	KANDULA SRINATH
48	U15CS095	KONATALA PUSHPA
49	U15CS105	LALJEE
50	U15CS109	M UTTEJ
51	U15CS123	MOHAMMAD ASLAM SHAREEF
52	U15CS126	MOORABOINA NARESH
53	U15CS133	NALLURI AKHIL BABU
54	U15CS134	NAMBURI VIJAY KUMAR
55	U15CS135	NARENDULA NIREESHA
56	U16CS003	NALAMOTHU SRIKANTH
57	U16CS004	ABDUL KHADIR L
58	U16CS015	B J JAISON
59	U16CS016	SARAVANAKUMAR S
60	U16CS032	MUGESH P
61	U16CS094	GUGULOTH ANVESHA
62	U16CS102	RAHUL P
63	U16CS115	BHUMIRDDY MAHITHA
64	U16CS117	S YUGANDHAR
65	U16CS118	CHOKKAM NAGARAJU
66	U16CS134	HEMA S
67	U16CS156	RIK ROY
68	U16CS171	GOGA VAMSI

COURSE COORDINATOR **HEAD OF THE DEPARTMENT**

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CERTIFICATE OF PARTICIPATION

This certificate is presented to

POOJA KUMARI

For actively participating in the value added course **"Python for Data Science and AI "** Conducted by School of Computing, BIHER from 18.12.2017 to 29.01.2018.

COURSE COORDINATORS

HEAD OF THE DEPARTMENT

DIRECTOR

COURSE FEEDBACK FORM

Academic Year		2017					
Term		ODD SEM					
Course Number							
Course Title		Python for Data Science & AI					
Number of Credits							
Type of Course	Regular		Elective		Add-on	✓	

I. Information on the Respondent: (Tick (√) Appropriately)

1. **Percentage of classes attended**

0-20		20-40		40-60		60-80		80-100	✓

2. **Number of hours per week spent on the course (Other than lecture hours)**

0-2		2-4		4-6		6-8		8-10	✓

3. **Preparation for the course by the student:**

(i)	Have done part of this course earlier	X
(ii)	Has adequate prior exposure to the prerequisites	X
(iii)	Had to pickup relevant additional topics through concurrent study	✓
(iv)	Have no exposure to the background material	X

4. **The expectations for taking the course by the student are:**

(a)	Enhance by skill base in the area of specializations	✓
(b)	Get exposed to a relevant subject	✓
(c)	Curiosity	✓
(d)	Better Employment Opportunity	✓
(e)	Complete Course requirements	
(f)	To Improve CGPA	

About the Instructor: Information on the Respondent: (Tick (√) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture		✓			
2.	Comment of the Subject		✓			
3.	Clarity of expression		✓			
4.	Level of preparation		✓			
5.	Level of interaction		✓			
6.	Accessibility outside the class			✓		
7.	Others (please specify					

A: Excellent		B: Very Good		C: Good		D: Satisfactory		E: Poor	

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COURSE FEEDBACK FORM

Academic Year		2017							
Term		ODD Sem							
Course Number									
Course Title		PYTHON FOR DATA SCIENCE & AI							
Number of Credits									
Type of Course	Regular		Elective		Add-on	✓			

I. Information on the Respondent: (Tick (√) Appropriately)

1. **Percentage of classes attended**

0-20		20-40		40-60		60-80		80-100	✓

2. **Number of hours per week spent on the course (Other than lecture hours)**

0-2		2-4		4-6		6-8		8-10	✓

3. **Preparation for the course by the student:**

(i)	Have done part of this course earlier	X
(ii)	Has adequate prior exposure to the prerequisites	X
(iii)	Had to pickup relevant additional topics through concurrent study	✓
(iv)	Have no exposure to the background material	X

4. **The expectations for taking the course by the student are:**

(a)	Enhance by skill base in the area of specializations	✓
(b)	Get exposed to a relevant subject	✓
(c)	Curiosity	✓
(d)	Better Employment Opportunity	✓
(e)	Complete Course requirements	
(f)	To Improve CGPA	✓

About the Instructor: Information on the Respondent: (Tick (√) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture	✓				
2.	Comment of the Subject	✓				
3.	Clarity of expression		✓			
4.	Level of preparation		✓			
5.	Level of interaction			✓		
6.	Accessibility outside the class			✓		
7.	Others (please specify					

A: Excellent		B: Very Good		C: Good		D: Satisfactory		E: Poor	

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