

TCET/FRM/IP-02/09

Revision: A

## Industry Skill based Bridge Course (IBC) Plan Advanced Programming with Python

Semester: IV

Class: TE-CMPN

S. No	Module No	Lesson No	Topics Planned (Technology to be used)	Teaching Aids Required	Planned / Completion Date	Resource Book Reference	Remarks
1	Module 1	L 1.1	Hands on session on Introduction into the sys module, Python and the Shell	LCD Projector / White Board	A1/A2: 17/01/2018	1.1	
					B1/B2: 18/01/2018		
2	Module 1	L 1.2	Hands on session on Forks and Forking in Python	LCD Projector / White Board	A1/A2: 18/01/2018	1.1	
					B1/B2: 19/01/2018		
3	Module 1	L 1.3	Introduction into Threads, Pipe, Pipes and "99 Bottles of Beer"  <b>Exercise on L 1.1, L1.2</b>	LCD Projector / White Board	A1/A2: 24/01/2018	1.2	
					B1/B2: 25/01/2018		
4	Module 2	L 2.1	Hands on session on Graph Theory and Graphs in Python"	LCD Projector / White Board	A1/A2: 25/01/2018	1.2	
					B1/B2: 01/02/2018		
5	Module 2	L 2.2	Hands on session on Graphs: PyGraph", Graphs: NetworkX"	LCD Projector / White Board	A1/A2: 31/01/2018	1.2, 1.3	
					B1/B2: 02/02/2018		
6	Module 2	L 2.3	<b>Exercise on L2.1, L 2.2 &amp; Finite State Machine in Python, Turing Machine in Python</b>	LCD Projector / White Board	A1/A2: 01/02/2018	1.2, 1.3	
					B1/B2: 08/02/2018		
7	Module 2	L 2.4	Exercise on Levenshtein Distance	LCD Projector / White Board	A1/A2: 07/02/2018	1.2	
					B1/B2: 09/02/2018		
8	<b>TEST, EVALUATION &amp; FEEDBACK - I</b>				A1/A2: 08/02/2018		
					B1/B2: 15/02/2018		

9	Module 3	L 3.1	<b>Hands on session on</b> NumPy Introduction, Data Type Object, dtype, Numerical Operations on Numpy Arrays, Changing the Dimensions of Arrays	LCD Projector / White Board	A1/A2: 08/02/2018	1.3	
					B1/B2: 15/02/2018		
10	Module 3	L 3.2	<b>Hands on session on</b> Python, Numpy and Probability, Weighted Choices and Weighted Samples, Creation of Synthetical Test Data, Boolean Masking of Arrays	LCD Projector / White Board	A1/A2: 15/02/2018	1.3	
					B1/B2: 16/02/2018		
11	Module 3	L 3.3	<b>Hands on session on</b> Matrix Arithmetic, Reading and Writing ndarrays, Matplotlib Introduction, Spines and Ticks, Legends and Annotations	LCD Projector / White Board	A1/A2: 28/02/2018	1.3	
					B1/B2: 01/03/2018		
12	Module 4	L 4.1	<b>Hands on session on</b> Python Image Processing Tutorial, Multiple Figures and Axes, Histograms, Contour Plots, Image Processing Techniques	LCD Projector / White Board	A1/A2: 01/03/2018	1.2, 1.3, 2.5	
					B1/B2: 15/03/2018		
13	Module 4	L 4.2	<b>Exercise on L 3.1, L 3.2 &amp;</b> Pandas Tutorial, Pandas Tutorial Continuation, Data Visualization with Pandas and Python	LCD Projector / White Board	A1/A2: 14/03/2018	1.2, 1.3, 2.5	
					B1/B2: 15/03/2018		
14	Module 4	L 4.3	<b>Exercise on L 4.1, L 4.2 &amp;</b> Date and Time, Python, Pandas and Timeseries, Linear Combinations	LCD Projector / White Board	A1/A2: 15/03/2018	1.2, 1.3, 2.2	
					B1/B2: 16/03/2018		
15	Module 5	L 5.1	<b>Hands on session on</b> Python, SQL, MySQL and	LCD Projector / White Board	A1/A2: 21/03/2018	1.2, 1.3, 2.2	
					B1/B2: 22/03/2018		
16	Module 5	L 5.2	<b>Hands on session on</b> Python and SQLite	LCD Projector / White Board	A1/A2: 22/03/2018	1.2, 1.3, 2.3	
					B1/B2: 23/03/2018		
17	Module 5	L 5.3	<b>Exercise on L 5.1, 5.2 &amp;</b> Application using Python and Database	LCD Projector / White Board	A1/A2: 28/03/2018	1.3	
					B1/B2: 05/04/2018		

18	Module 6	L 6.1	<b>Hands on session on</b> Example for recursive Programming: Towers of Hanoi	LCD Projector / White Board	A1/A2: 04/04/2018	1.3	
					B1/B2: 06/04/2018		
19	Module 6	L 6.2	<b>Exercise on L 6.1 &amp;</b> Mastermind / Bulls and Cows	LCD Projector / White Board	A1/A2: 05/04/2018	1.3	
					B1/B2: 12/04/2018		
20	<b>TEST, EVALUATION &amp; FEEDBACK - II</b>				A1/A2: 12/04/2018		
					B1/B2: 12/04/2018		
<b>Remark:</b>							
Course:		Syllabus Coverage:		Practice Session:		Beyond Syllabus:	
<b>No. of (lectures planned) / (lectures taken): 20 /</b>							

**Reference Books:**

1. Dave Kuhlman "A Python Book: Beginning Python, Advanced Python, and Python Exercises", Revision (1.3a), Open Source MIT License
2. Dr. Andrew N. Harrington "Hands-on Python Tutorial" Release 1.0
3. Allen B. Downey, "Think Python – An Introduction to Software Design" Green Tea Press

**Digital References:**

1. [http://www.python-course.eu/advanced\\_topics.php](http://www.python-course.eu/advanced_topics.php)
2. <http://www.tutorialspoint.com>
3. <https://docs.python.org/3>
4. <http://www.codecademy.com>
5. <https://www.codeschool.com/learn/python>

**Note:**

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.

(sd/-)

Name & Signature of Faculty

Date:

(sd/-)

Signature of HOD

Date:

(sd/-)

Signature of Principal / Dean Academic

Date: