A IN THE OF TECHNOLOGY		National Institute of Technology Meghalaya  An Institute of National Importance													CURRICULUM		
Prog	ramm	me Master of Computer Applications Academic Year of Regula											of Regula	tion	2024-25		
Depa	artme											ester	IV		IV		
Course										Credit Structure			Marks Distribution				
Code		Course Name Pre-Req						e-Requisite	ite L	Т	Р	С	INT	MID	END	Total	
CA57	<b>72</b>	Data Analytics using Python							2	0	0	2	50	50	100	200	
										CO's	Statement			<u> </u>	Bloom's Taxonomy		
Course Objectives		This course introduces understand the importance of data analytics  CA572.1  Able to analyse the different data representation and data pre- protection techniques															
			-		nt types of o		•		Course Outcomes	CA572.2	Able to assess and compare differe analytics techniques				Apply		
		This course familiarizes the data analytics techniques using python programming for publically available datasets								CA572.3	using python libraries			•	Evaluate		
		CA572.4 Able to apply data analytics tech real life applications										alytics techn	Apply				
COs	2	Mapping with Program Outcomes (POs								)	M				apping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
CA572.1		1												2	1		
CA572.2		1	1											2	1		
CA572		2	3	1	2	1	1							2	1	1	
CA572		2	3	1	1	3	1							2	1	1	
CA57	72	1.5	2.3	1	1.5	2	1							2	1	1	
N. I							-		LLABUS								
No.				1 . 4		•		ntent					D 41	Hours	COs		
I	und	troduction: Data analytics and its importance, introduction of python programming and installing Python, inderstanding operators, variables, data types, conditional statements, looping constructs, functions, lists and dictionaries in Python, Importing and exporting data in python												08	CA572.1		
II	Dat Hie Reg	ta pre-processing: Handling missing values, data transformation, normalization, discretization taxonization t												10	CA572.2		
III	Lea Par	arn and installing Jupyter Notebook, Understanding the concept of Standard Libraries in python : Numpy, indas, sci-kit learn, MatplotLib, is studies: Predicting Ioan defaulters, Customer segmentation, Time series forecasting etc.												10	CA572.3 CA572.4		
							Total Ho	urs						28			
		eadings															
1.	A.C.	Müller a	nd S. Gui	do. <i>"Introd</i>	luction to n	nachine led	arning wit	th Python: a	guide for da	ta scientists	". O'Reilly	Media, In	c. 1 <sup>st</sup> edition	n, 2016			
2	D D		nd B.K. Jo	" 5 .							nd						

3. J. Han, J. Pei, and M. Kamber. "Data mining: concepts and techniques". Elsevier, 3<sup>rd</sup> edition, 2011

## **Supplementary Readings**

- 1. W. McKinney. "Python for data analysis: Data wrangling with Pandas. NumPy, and IPython". O'Reilly Media, Inc. 2<sup>nd</sup> edition, 2017
- 2. P.N.Tan, M. Steinbach, A. Karpatne, and Vipin Kumar. "Introduction to data mining". Pearson Education India, 2<sup>nd</sup> edition, 2016.
- 3. S. Raschka and V. Mirjalili. "*Python machine learning: Machine learning and deep learning with Python, scikit-learn, and TensorFlow*". Packt Publishing Ltd. 2<sup>nd</sup> edition, 2019.