



**BHAVAN'S
BHAGWANDAS PUROHIT VIDYA MANDIR
NAGPUR**

CURRICULUM PLAN

Session 2019-2020

Std: - XII Subject: INFORMATICS PRACTICES (065)

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BHAVAN'S BHAGWANDAS PUROHIT VIDYA MANDIR, NAGPUR

SPLIT-UP SYLLABUS (2019 - 2020)

SUBJECT :- Informatics Practices (065)

STD :- XII

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	NO. OF PERIODS REQUIRED	ACTIVITIES	LEARNING OUTCOMES
June – 2019	14-22 (6 Days)	9	Unit : 1 Data Handling(DH-2) Python Pandas	Advanced operation on Data Frames Pivoting and Sorting	3		
				Advanced operation on Data Frames Aggregation	3	Given a days worth of stock market data and print the highest and lowest prices of each stock.	Students will be able to various advanced operations on Data Frames
	Descriptive Statictics Min, Max and Mode	3					
	Descriptive Statictics Mean, Count and Sum	2					
24-29 (6 Days)	9			Descriptive Statictics Median, Quartile, Var	3	Given a series, print all the elements that are above 75 th percentile.	Students will come to know how to apply different statistics functions on Data Frames. Students will learn how to create histograms.
				Creating a histogram and quantiles	4		



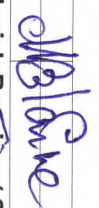

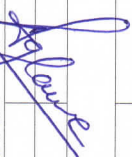
MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	NO. OF PERIODS REQUIRED	ACTIVITIES	LEARNING OUTCOMES	
July – 2019	01-06 (6 Days)	9	Unit : 1 Data Handling(DH-2)	Function application : Pipe, apply and apply map	3	Use map functions to convert all negative numbers in a Data Frame to the mean of all the numbers.	Students will be able to understand how to use Function application.	
				Function application : Aggregation(group by)	4			
				Function application : Transform	2			
	8-12 (5 Days)	7-8		4	Reindexing and altering labels	6		Students will be able to do reindexing and altering labels of Data Frames.
					Programs based on Data Frame	2		
					1D array, 2D array	4		
	15-20 (6 Days)	9		5	Arrays:Slices, joins and Subsets	5		Students will be able to create 1D ,2D array and learn how to do slices, joins and subsets
					Arithmetic operations on 2D arrays	4		
					Covariance, Correlation and Linear regression	5		
	22-27 (6 Days)	9		4	Unit : 1 Data Handling(DH-2) Numpy	4	Given sample data, plot a linear regression line.	Students will be able to plot bar graphs, histogram, frequency polygons, box plot and scatter plots
Unit : 1 Data Handling(DH-2) Plotting with Pyplot								
29-31 (3 Days)	4	4	Plot bar graphs, histograms	4				
(Periodic Test 1 – 01st July 2019)								

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	NO. OF PERIODS REQUIRED	ACTIVITIES	LEARNING OUTCOMES		
August- 2019	1-3 (3 Days)	4	Unit : 1 Data Handling(DH-2) Plotting with Pypplot	Frequency polygons, box plots and scatter plots	4	Take data from government websites, aggregate and summarize it. Then plot is using different plotting function of the pypplot library.			
	5-9 (5 Days)	7-8		Minimal Django based web application that a parses a GET and POST request	4	Integrate SQL with Python by importing MYSQL dB	Students will understand the concept of Minimal Django based web application		
	13-16 (3 Days)	3-4		Writes the fileds to a file - Flat File and CSV file	4	Write a Django based web server to parse a user request(POST), and write it to a CSV file.			
	19-23 (5 Days)	7-8		Interface Python with an SQL Database	4	Find the min,max,sum and average of the marks in a student mark table	Students will be able to * Create table in MySQL * Insert values in the table * Display the data of the table * Apply aggregate functions to the table * Use Having clause, group by and Order by clause by using MySQL query.		
			Unit : 3 Data Management(DM-2)	SQL Commands : Aggregate function	3	SQL Clauses:- Having, Group by and Order by	4	Find th total number of customers from each country in the table using group by	

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August- 2019	26-31 (5 Days)	7-8	Unit : 2 Basic Software Engineering(BSE)	Introduction to Software Engineering	2		Students will appreciate the knowledge of Waterfall model, evolutionary model and Component based model
				Software Processes : Waterfall Model	2		
				Software Processes : Evolutionary Model	2		
				Software Processes : Component based model	2		
(Periodic Test 2 – 05th August 2019)							
September- 2019	3-5 (3 Days)	3-4	Unit : 2 Basic Software Engineering(BSE)	Delivery Models : Incremental delivery	2		
				Delivery Models : Spiral delivery	2		
				Process activities: Specification, design/Implementation	4		
	9-14 (5 Days)	7-8		Process activities: Validation, evolution	4		
				Agile methods: Pair programming and Scrum	2		
				Business use case diagram	2	Business use-case diagrams for an airline ticket booking system, train reservation system, stock exchange	
16-20 (5 Days)	7-8		Revision for Half Yearly exam	4			

Half Yearly Examination - 23rd September 2019
Practical Exam - 09th October to 12th October 2019

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	NO. OF PERIODS REQUIRED	ACTIVITIES	LEARNING OUTCOMES
October – 2019	14-19 (6 Days)	8-9	Unit : 2 Basic Software Engineering(BSE)	Practical aspects : Version control system(GIT)	3	Write a program and manage the code with a version control system(GIT)	Students will learn how to create use-case diagrams
				Case Studies of Software systems and build use-case diagrams	5		
	21-23 (3 Days)	3-4	Unit 4 : Society, Law and Ethics(SLE-2)	Intellectual property rights, plagiarism	2		
				Digital rights management and licensing(Creative Commons, GPL and Apache)	2		
November – 2019	1-2 (2 Days)	2-3	Unit 4 : Society, Law and Ethics(SLE-2)	Open Source, Open Data and Privacy	2	Identify the different types of Opensource softwares on internet	Students will be able to identify different types of cybercrimes
				Privacy Laws, Frauds	2		
	4-8 (5 Days)	7-8	Unit 4 : Society, Law and Ethics(SLE-2)	Cybercrimes, Phishing, illegal downloads, child pornography, scams	3		
				Cyber forensics, IT Act 2000	3		

MONTH	WEEKLY DATES	NO. OF PERIODS	TOPIC	SUBTOPIC	NO. OF PERIODS REQUIRED	ACTIVITIES	LEARNING OUTCOMES
November-2019	11-16 (5 Days)	7-8	Unit 4 : Society, Law and Ethics(SLE-2)	Technology and Society : Understanding of societal issues	2		
				Cultural changes induced by technology	2		
	E-waste management: Proper disposal of used electronic gadgets	4			Students will come to know advantages of E-waste disposal		
	Identify theft, Unique ids and biometrics	3					
	Gender and disability issues while teaching and using computers	3					
	Role of new media in society : Online campaigns, crowdsourcing, smart mobs	3					
(Periodic Test 3 - 11th November 2019)							
December-2019	2-7 (6 Days)	9	Unit 4 : Society, Law and Ethics(SLE-2)	Issues with the internet : Internet as an echo chamber	5		
				Net neutrality and Internet addiction	4		
	Case Studies :- Arab Spring	3					
	Case Studies :- Wikileaks	3					
	Case Studies :- Bit coin	3					
	Revision for Preliminary Exam	9					
Preliminary Examination - 03rd January- 2020							
  							
Date: 08/05/2019	1) Mr. Manish Bansinghe(SKN)	2) Mr. Yogesh Sawarkar(Ashti)	3) Ms. Rupali Aglawe(BL.VN, Wardha)				