CRASH COURSE ON PYTHON

- Beginner Course
- 50 hours
- Blended learning with **moodle**
- Highly Qualified and Skilled Staff

python

NumPy

pandas

KEY HIGHLIGHTS

- THIS COURSE IS DESIGNED TO INTRODUCE THE BASIC CONCEPTS OF PYTHON USING THE MOST COMMON STRUCTURES.

- NO PREVIOUS EXPOSURE TO PROGRAMMING IS NEEDED.

- BY THE END OF THIS COURSE STUDENT WILL BE ABLE TO WRITE SIMPLE PROGRAMS USING PYTHON.

- FIGURE OUT HOW THE BUILDING BLOCKS OF PROGRAMMING FIT TOGETHER AND COMBINE ALL OF THIS KNOWLEDGE TO SOLVE A COMPLEX PROGRAMMING PROBLEM.

- WE'LL START OFF BY DIVING INTO THE BASICS OF WRITING A COMPUTER PROGRAM.

- ALONG THE WAY, STUDENT WILL GET HANDS-ON EXPERIENCE WITH PROGRAMMING CONCEPTS THROUGH INTERACTIVE EXERCISES AND REAL-WORLD EXAMPLES.

FOR MORE INFORMATION CONTACT

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Department of Computer Science & Mathematics
Vivekanand College, Kolhapur (Autonomous)
E-Ward, Tarabai Park, Kolhapur - 416003 (MS)

* PYTHON *

कोर्स हजेरी पत्रक

सन - २०२२ (माहे. मे.२?   )

Attendance / Signature Register

Roll No	Student's Name	28/4/22	30/4/22	5/5/22	6/5/22	7/5/12	12/05	13-5-22	14-5-22	19-5-22	20-5-22	21-5-22	26/5/22	2-5-22	6/5/22	7/6/22
7889	Sumit Dipak Pasit	sign	sign	sign	sign	sign	sign	sign	sign	sign	Ab	sign	Ab	Ab	Ab	sign
7887	Rahim Nurmahamad Nagarji	RI	RI	RI	RI	RI	AB	RI	RI	RI	RI	RI	Ab	RI	RI	RI
7881	Abhinandan Laxman Kolekar	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
7896	Ajay Ravasaheb Rajput	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	AB	Ajay	Ajay	AB	Ab	Ajay	Ajay	Ajay	Ajay
7890	Miss Kalyani. P. Patil	Kalyani	Kalyani	Kalyani	Kalyani	Kalyani	Kalyan	Kalyani	Kalyani	Kalyani	AB	AB	Ab	Kalyani	Kalyani	
7893	Shreya Shahaji Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Ab	Patil	Patil	Patil
7886	Saniya Niyaj Mujawar	SN.Mujawar	SN.Mujawar	SN.Mujawar	SN.Mujawar	SN.Mujawar	AB	SN.Mujawar	AB	SN.Mujawar	SN.Mujawar	SN.Mujawar	Ab	SN.Mujawar	SN.Mujawar	Ab
7892	Rohini Vilas Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	AB	Patil	Ab	Patil	Patil	Patil
7878	Vaibhav Maruti Kadvekar	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	AB	AB	Vaibhav	AB	AB	Vaibhav	Vaibhav	Vaibhav	Vaibhav
7900	Vaibhav Mahendra Thankar	sign	sign	sign	sign	AB	AB	sign	sign	sign	AB	sign	Ab	sign	sign	sign
7880	Khamkar Akash Baburao	Akhamkar	Akhamkar	Akhamkar	Akhamkar	Akhamkar	Akhamkar	Akhamkar	Akhamkar	Akhamkar	AB	Akhamkar	Ab	Ab	Akhamkar	Ab
7443	Sanjana Sanjay Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	AB	Patil	Patil	Patil	Patil	Patil		
6859	Riya Inas Fernandes	R.	R.	R.	R.	R.	R.	R.	AB	AB	R.	R.	R.	AB		
6917	Sanskruti Sanjay Shingare	S.S.S	S.S.S	S.S.S	SSS	AB	AB	AB	AB	S.S.S	S.S.S	S.S.S				
7874	Vasundhara Atul Bendake	VBendake	VBendake	Bendake	Bendake	Bendake	Bendake	VBendake	Bendake	Bendake	AB	AB	VBendake	VBendake	VBendake	
7879	Mrunali Ramesh Kamble	Mrble	Mrble	Mrble	Mrble	Mrble	Mrble	Mrble	Mrble	Mrble	AB	Mrble	Mrble	Mrble	Mrble	Mrble
7882	Shweta Jitendra Koshti	Koshti	Koshti	Koshti	Koshti	Koshti	Koshti	Koshti	Koshti	Koshti	AB	Koshti	Koshti	Koshti	Koshti	Koshti
7898	Srushti Ravindra Tandale	sign	sign	sign	sign	sign	sign	sign	sign	sign	AB	AB	sign	sign	sign	Ab
7883	Koti Nikita Prakash	sign	sign	sign	sign	sign	AB	SSS	S.Ss	sign	sign	sign	sign	sign	sign	sign
7888	Sangeeta Ramawatar Pareek	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-P	Sangu-T.	Sangu-T.	Sangu-T.	Sangu-T.
7875	Samiksha Subhash Bhosale	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha	Samiksha
7873	Ashwini Rajaram Bankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	ABankar	Ab
7899	Peanjali Anandkumar Teedale	P.A.Teedale	P.A.Teedale	P.A.Teedale	P.A.Teedale	AB	P.A.Teedale	P.A.Teedale	P.A.Teedale	P.A.Teedale	AB	AB				P.A.Teedale
7891	Pranita Rajendra Patil	JRPatil	JRPatil	JRPatil	JRPatil	JRPatil	JRPatil	JRPatil	JRPatil	JRPatil	JRPatil	JRPatil		JRPatil	JRPatil	JRPatil
9238	Kaushal Pramod Kulkarni	KKulkarni	KKulkarni	KKulkarni	AB	AKulkarni	AB	AB	AB	KKulkarni	AB	KKulkarni	KKulkarni			
9236	Aditya Shriram Kulkarni	Skulkarni	Skulkarni	Skulkarni	AB	AKulkarni	AB	AB	AB	Skulkarni	AB	Skulkarni	Skulkarni			
—	Om Amit Gaikwad	Gaikwad	Gaikwad	Gaikwad	Gaikwad	Gaikwad	AB	Gaikwad	Gaikwad	Gaikwad	AB	AB	Gaikwad			
—	Prathamesh J. Sutar	Sutar	Sutar	Sutar	Sutar	Sutar	AB	Sutar	Sutar	Sutar	AB	Ab				
7872	Shivani. P. Bagadi	Shivani	Shivani	Shivani	Shivani	Shivani	AB	AB	AB	AB	Ab	AB				
7878	Vaibhav M. Kadvekar	Vaibhav	—	—	—	—	—	AB	AB	—						
7884	Sammruddhi G. Magdum	AB	AB	AB	Magdum	AB	AB	AB	AB	Ab	AB	Ab				

Roll-No	Name	28/4/2022	30/4/2022	5/5/2022	6/5/2022	7/5/2022	12-5-2022	13-5-22	14-5-22	19.5.22	20.5.22	21.5.22	3/6/22	9/8/22
7895	Vaishali Shivanand Patil	Patil	Patil	Ab	Patil	Patil	Ab	Patil	AB	Patil	AB	Patil	Ab	Ab
7877	Pratiksha Jitendra Desai	Desai	Desai	Ab	Desai	Desai	Desai	AB	AB	Desai	Ab	Desai	Ab	Ab
7901	Sejal Vijay Tonpe	Tonpe	Tonpe	Tonpe	Tonpe	Tonpe	Tonpe	Tonpe	Tonpe	Tonpe	AB	Tonpe	Tonpe	Tonpe
7897	Rutuja Arvind Randive	Randive	Randive	Randive	Randive	Randive	Randive	Randive	Randive	Randive	AB	Randive	Randive	Randive
	Prathamesh Jitendra Sutar	Sutar	Sutar	Ab	Sutar	Ab	Ab	AB	AB	Ab	AB	Ab	Ab	Ab
7885	Madhumati Tanaji More	Madhuli	Madhuli	Madhuli	Ab	Ab	Madhuli	Madhuli	AB	Madhuli	AB	Madhuli	Ab	Ab

Roll No	Student Name	30-06-22	01-07-22	02/07/22	04/07/22	05/07/22	06/07/22	07/07/22	8/07/22	09/07/22	11/07/22	12/07/22	13/07/22			
7880	Khamkas Akash Baburao	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar	Achamkar			
7889	Sumit Dipak Pasit	(sign)	(sign)	(sign)	(sign)	(sign)	(sign)	(sign)	(sign)	(sign)	(sign)	(sign)	(sign)			
7878	KADVEKAR Vaibhav M.	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav	Vaibhav			
7887	Nagarji Rahim N.	Sul	Sul	Sul	Sul	Sul	Sul	Sul	Sul	Sul	Sul	Sul	—			
7443	Sanjana Sanjay Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	—		—				
6859	Riya Inas Fernandes	R	R	R	R	R	R	R	R	R	R	R	R			
7875	Samiksha Subhash Bhosale	Samiksha	Samiksha	—												
7891	Pranita Rajendra Patil.	Patil	Patil	—												
7892	Rohini Vilas Patil	Patil	Patil	—												
7893	Shreya Shahaji Patil	Patil	Patil	—												
7888	Sangeeta Ramavatar Pareek	Sangeeta	Sangeeta	—												
9238	Kaushal Promod Kulkarni	Kkulkarni	Kkulkarni	—												
9236	Aditya Shriram kulkarni	Shri	Shri	—												
7881	Kolekar Abhinandan Laxman	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB			
7882	Shweta Jitendra Koshti	Koshti	Koshti	Koshti	AB	Koshti	Koshti	Koshti	Koshti	AB	Koshti	Koshti	Koshti			

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science and Mathematics organized

CRASH COURSE ON PYTHON

Certificate

This is to Certify that Mr./Miss/Ms._____

of_____has successfully completed

50 hours Crash Course on Python organized by Department of Computer Science and Department

of Mathematics during 25 April-13 July 2022.

Dr. V. B. Waghmare	Mr. S. P. Patankar	Dr. R. R. Kumbhar
Co-ordinator	Co-ordinator	Principal

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE

CRASH COURSE ON PYTHON

50 hours beginner course

Syllabus to be implemented from AY 2021-22

Unit	Syllabus	No of Lectures
UNIT-I	**Introduction to Programming Languages:** Programming languages- their classification and characteristics, language translators and language translation activities. **Planning the Computer Program:** What is program and programming paradigms Concept of problem Solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation. **Techniques of Problem Solving:** Algorithms, Flowcharting, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming	5L
UNIT-II	**Building Blocks of Program:** Data, Data Types, Data Binding, Variables, Constants, Declaration, Operations on Data such as assignment, arithmetic, relational, logical or boolean, ternary, bitwise, increment or decrement operators. **Introduction to Python Programming:** Features, Structure of a Python Program(Python Shell Indentations, Comments), Python Interpreter, Writing and executing simple program, Basic Data Types: numbers(int, long, float, complex), strings, Declaring variables, Performing assignments, arithmetic operations, Sequence Control – Precedence of operators, Type conversion, Simple input-output (print(), raw_input(), input())	5L
UNIT-III	**Conditional Statements:** if, if-else, nested if –else **Looping:** for, while, nested loops, else clause with while and for loop **Control statements:** Terminating loops, skipping specific conditions (break, continue, pass) **Numeric Functions:** abs(), ceil(), floor(), max(), min(), pow(), sqrt() **String Manipulation:** Declaring strings, String immutability, unicode string (u'String'), escape sequences (\), Operations on String (Concatenation (+), Repetition (*), Slicing ([index]), Range Slicing([start:end] or [:end] or [start:] , Member ship operator (in, not in)), String Functions : capitalize(), len(), lower(), swapcase(), upper()	10L

UNIT-IV	**Lists:** Creating a list, Displaying list(print()), Basic Operation(Length (len()), Concatenation(+), Repetition(*), Membership (in, not in), Iteration (for var in list), Slicing, Updating(=) and deleting(del) element of a list. Compare (cmp()), Maximum(max()) and minimum (min())), List Methods (Append (list.append()), Count (list.count()), Insert object (list.insert()), Remove (list.remove(), list.pop()), Reverse (list.reverse())) **Tuples (sequence of immutable objects) :** Creating tuples(using () brackets) and Deleting tuple(del), empty tuple, Displaying(print()), Basic Operation(Length (len()), Concatenation(+), Repetition(*), Membership (in, not in), Iteration (for var in list), Slicing, Updating(=) and deleting(del) element of a list, Compare (cmp()), Maximum(max()) and minimum (min()))	10L
UNIT-V	**Dictionaries** – Concept of dictionary, Creating Dictionary ({Key:Value,…}), Values are mutable objects but keys are immutable object, Properties of Dictionary keys, Basic Operation(Length (len()), Compare (cmp())), Dictionary Methods(Clear (dict.clear())), Existance of Key (dict.has_key()), List of dictionaries tuple pairs (dict.items()), List of keys (dict.keys()), Add dictionary (dict.update()), Dictionary Values (dict.values())) **Functions:** Defining Functions (def, name, arguments, : , function suite, return statement), calling a function, Pass arguments by value or by reference(using list), Advantages of functions, types of functions, function parameters(required, keyword, default), anonymous functions or ternary operator(lambda), Scope of a variable(global and local) **Modules**: Importing module, Creating & exploring modules, Math module, Random module, Time module, rules of locating module, namespace and scope (local and global), Functions for Modules (List of elements (dir()), List of Local elements (locals()), List of Global elements (globals()), Re importing module (reload()))	10L
UNIT-VI	**Introduction to NumPy basics** – Creating NumPy arrays, structure and content of arrays, subset, slice , index and iterate through arrays, multidimensional arrays, python lists vs numy arrays, introduction to numpy operations on numpy arrays, operations on array basic, linear algebra operations	5L
UNIT-VII	**Introduction to pandas** – Introduction, panda basics, Pandas Series, Pandas Data Frames, Reading csv files, Reading JSON, Pandas analyzing Data, Cleaning Data : Cleaning empty cell, Cleaning wrong format, Cleaning wrong data, Removing Duplicates, Pandas Correlation, Pandas Plotting : Scatter plot, Histogram	5L

Text books:
1) Charles Dierbach, Introduction to Computer Science using Python, Wiley, 2013
2) James Payne, Beginning Python: Using Python 2.6 and Python 3, Wiley India, 2010 P
3) Paul Gries, Jennifer Campbell, Jason Montojo, Practical Programming: An Introduction to Computer Science Using Python 3, Pragmatic Bookshelf, 2/E 2014
Additional References:
1. Paul Gries , Jennifer Campbell, Jason Montojo, Practical Programming: An Introduction to omputer Science Using Python 3, Pragmatic Bookshelf, 2/E 2014
2. Adesh Pandey, Programming Languages – Principles and Paradigms, Narosa, 2008
3. A. Lukaszewski, MySQL for Python: Database Access Made Easy, Pact Publisher, 2010

Practicals

Python Programming

Using the Operating system (logging, creating – deleting folders, creating-deleting files, using editors etc.)

(1) Installing python and setting up environment. Simple statements like printing the names, numbers, mathematical calculations, etc.

(2) Simple programs containing variable declaration and arithmetic operations

(3) Programs based on conditional constructs

(4) Programs based on loops

(5) Programs related to string manipulation

(6) Programs related to Lists, Tuples

(7) Programs related to dictionaries

(8) Programs to read & write file.

(9) Programs to do searching and sorting