NIRMA UNIVERSITY

Institute:	**Institute of Commerce**
Name of Programme:	**Bcom (Hons.) Programme**
Course Code:	
Course Title:	**Introduction to Programming**
Course Type:	**Common Course**
Year of introduction:	**2022 (Semester-II)**

L	**T**	**Practical component**				**C**
		LPW	**PW**	**W**	**S**	
2	**0**	**2**	**0**	**0**		**3**

Course Learning Outcomes (CLO):

After successful completion of the course, the students will be able to:

- Elaborate on the technical aspects of programming and development methodologies. BL-6
- Create basic programs in object-oriented programming for real world scenarios. BL-6
- Discuss on the use of object-oriented programming in data processing. BL-6

Syllabus: **Total Teaching hours: 30**

Unit	Syllabus	Teaching hours
I	**Programming Fundamentals and Future Trends** • Basics of algorithms and Flowcharts • Software development methodologies – SDLC, Prototyping, Agile etc • Introduction to Object Oriented Programming	08
II	**Fundamentals of Python** • Data Types and Variables • Input and Output • Logical Expressions • Using the Python Debugger • Lists and Loops • Numeric and Date Functions • Working with Strings • Functions	10
III	**Data Analysis using Python**	12

	• Tuples, Dictionaries, and Sets • Graphics Programming using Python • File Handling in Python • Introduction to various libraries used in Data Science • Web Scraping Tools for Data Extraction • Connect, Create Database, Table via python • Reporting / Descriptive Analytics, or Predictive analytics • Introduction to Data Visualization for businesses • Visualization of Numerical and Non-Numerical Data	

Self Study:	
Suggested Readings/ References:	• Lutz, M., Learning Python: Powerful Object-Oriented Programming. O'Reilly Media, Inc. • Kamthane, A. N., & Kamthane, A. A. (2018). Programming and Problem Solving with Python. McGraw-Hill Education. • Gowrishankar, S., & Veena, A. (2018). Introduction to Python Programming. CRC Press.
Suggested List of Experiments:	
Suggested Case List:	

L = Lecture, T = Tutorial, P = Practical, C = Credit

w.e.f. academic year 2022 - 23 and onwards