

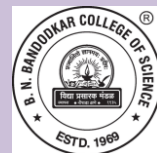
Academic Council Meeting No. and Date : 03 / February 14, 2022

Agenda Number : 7

Resolution Number : 13 / 5.3



**Vidya Prasarak Mandal's
B. N. Bandodkar College of
Science (Autonomous), Thane**



Certificate course in

Basics of C++

[With effect from Academic Year 2022-2023]

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Preamble

A basic of C++ (course) is introduced as a certificate course conducted by Department of Physics VPM's B. N. Bandodkar College of Science, Thane. In choice-based credit system the course would be of 45 hrs duration. There would be single paper based on syllabus consisting of 2 units. This course will offer credit of 2 on successful completion of the course.

Examination will be conducted in in two parts; internal and practical. Internal examination will be taken in a form of assignments. One assignment and a small project will be given on both the units which will help in strengthening the knowledge of the student. Practical examination will focus on application of the knowledge gained in the course. Teaching time allotted will be 30 periods for theory and 15 periods for practical.

Course Outcomes

It gives you brief knowledge on programming language C++ with demonstrations. We will cover following topics.

- Introduction to C++, Expressions and interactivity
- Making decisions, Looping
- Functions
- Arrays, Sorting arrays
- Pointers
- Introduction to OOPS: Classes, Objects
- Inheritance
- Polymorphism

Eligibility :

Passed 12th standard (HSC) of Maharashtra State Board / CBSE / ICSE board or equivalent.

Mode of Conduct :

Offline lectures / Online lectures

Structure of Programme

CourseCode	Course Title	No. of lectures	Credits
BCCBC029	Certificate course in Basics of C++	40	2

Syllabus

Course Code	Course Title	Credits	No. of lectures
BCCBC029	Certificate course in Basics of C++	2	
Unit I :	<ul style="list-style-type: none">Programming Using C++: Introduction to Computers and programming, Introduction to C++, Expressions and interactivity, Making decisions, Looping, Functions , Arrays , Sorting arrays , Pointers		10
Unit II :	<ul style="list-style-type: none">Introduction to classes: More about classes, Inheritance, polymorphism, virtual functions		10

List of practicals

1. C++ Program (Conversion from decimal system to binary, octal, hexadecimal system).
2. C++ Program (Program on mean, variance, standard deviation for a set of numbers).
3. C++ Program (Sorting of data in ascending or descending order).
4. C++ experiment (Programs on class, traffic lights)
5. C++ experiment (Programs on inheritance, over loading)

Books for Reference

1.	Starting out with C++ from Control structures through objects, by Tony Gaddis, Sixth edition Penram International Publications, India
2.	Object Oriented Programming with C++, By E. Balagurusamy, 2nd ed. TMH
3.	OOPS with C++ from the Foundation, By N. R. Parsa, Dream Tech Press India Ltd

Evaluation Scheme

Assignments and Practical Examination

Total number of assignments:

01 Assignment **20 marks**

01 Small Project **20 marks**

Total marks: **40 marks**

Internal Assignments have to be submitted in the softcopy format in the department.

Practical Examination: Suggested Format of Question paper

Duration: 3Hours

Total Marks:60

All questions are compulsory

Q. 1	Based on Unit I	15
Q. 2	Based on Unit I	15
Q. 3	Based on Unit II	15
Q. 4	Based on Unit II	15

Total of Internal Assignment + Project

40Marks

Total of Practical Examination

60Marks

Grand Total

100Marks

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