



Kopargaon Taluka Education Society's

**K. J. Somaiya College of Arts, Commerce & Science,  
Kopargaon**

Mohiniraj Nagar, Kopargaon, Tal: Kopargaon, Dist: Ahmednagar Pin-423601

**Certificate Course in  
Principles of Programming Language**

<b>+ Course Code:</b>	<b>CC.004</b>
<b>+ Organized By:</b>	<b>Department of Mathematics</b>
<b>+ Date of Commencement:</b>	<b>01/07/2019.</b>
<b>+ Duration of Course:</b>	<b>02 Months (Min. 30 Hrs.)</b>
<b>+ Course Coordinator:</b>	<b>Dr. B. D. Gavhane</b>

# **Certificate Course Organized by Department of Mathematics**

## **“Principles of Programming Language”**

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Kopargaon Taluka Education Society's

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,  
KOPARGAON

Mohaniraj nagar, Kopargaon.423601

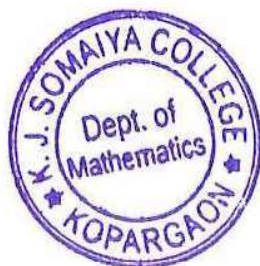
**Organized by**  
**DEPARTMENT OF MATHEMATICS**

CERTIFICATE COURSE  
IN MATHEMATICS

**“Principles of Programming Language”**

**Course Code- CC.004**

**Year of Commencement: 2019-20**



## **Certificate Course in MATHEMATICS**

**2022-23**

**-: Name of the Certificate Course:-**

### **“Principles of Programming Language”**

(Computer based Practical)

**Designed By: -** Department of MATHEMATICS

**Nature of Course: -** Theory + Practical (Computer based)

**Duration: -** Two Months

**Eligibility:-** 12<sup>th</sup> Pass

**Course Fee: -** Nil - Rs. per Student

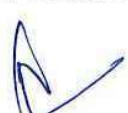
**Capacity: -** Min. 20 Students per batch


**Total Lectures: -** 30 lectures

#### **Evaluation Process:- Grade System (Marks Converted into Grade)**

		<b>Grade System:-</b>
➤ Theory exam.-	50 Marks	1. 'A' Grade – More than 70 Marks
➤ Practical & Exercises.-	50 Marks	2. 'B' Grade – 60 to 70 Marks
<b>Total Marks: -</b>	<b>100 Marks</b>	3. 'C' Grade – 50 to 60 Marks
		4. 'D' Grade – 40 to 50 Marks

**Passing: -** Obtained 40% Marks

  
**Coordinator: -** Dr. B. D. Gavhane  
Head, Dept. of Mathematics  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon

  
Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon

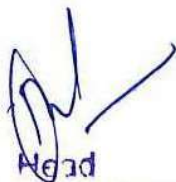


**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**

**Department of Mathematics  
2022-23**

1	Name of Department		Mathematics
2	Title of Course		Principles of programming language
3	Course Level		Certificate
4	Implementation academic year		Since 2019-20
5	Preamble of Syllabus		1. Concepts of programming 2. Programming with C 3. Computational numerical methods
6	Faculty of the Course		Science
7	Eligibility of Admission and prerequisite		12 <sup>th</sup> Science Pass
8	Duration of the Course		30 days
9	Intake capacity of students		60
10	Total hours of teaching		30
11	Pattern of examination, if any		
	Theory exam, Practical and exercises		Theory and practical exam at the end of the course.
12	Teaching Faculty		
	Name of Faculty	Designation	Qualification
	Dr. B.D. Gavhane	Assistant Professor	M.Sc.,Ph.D., Mathematics
	Mr. R.B.Chavan	Assistant Professor	M.Sc. Mathematics
13	Other Facilities		Computer Laboratory, Library
14	Recommended books		
	1. Numerical Methods In Engineering And Science- B. S. Grewal, Mercury Learning And Information		
	2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.		
	3. Computer oriented Numerical Methods – V. Rajaram.		
	4. Let Us C-Yashavant P. Kanetkar		
15	Detailed Syllabus		
Sr. No.	Topic Name		No. of Lectures
1	Concepts of programming 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.		6
2	Programming with C 1. Structure of C program, Character set, key words,		12

	<p>Constants and variables, Variable names, Data types and their declarations, Symbolic Constants.</p> <p>2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ).</p> <p>3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator.</p> <p>4. Formatted input/output</p> <p>Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Use of Library functions: e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, Newton- Raphson method.</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule.</p>	12
<b>Total No. of Lectures</b>		<b>30</b>

  
 Head  
 Department of Mathematics  
 K. J. Somaiya College, Kopargaon

  
 Principal  
 K. J. Somaiya College of Arts  
 Commerce & Science, Kopargaon

# Syllabus

Department of Mathematics

Certificate Course: **"Principles of Programming Language"**

(Computer based Practical)

Syllabus: **2022-23**

## Objectives:

- 1) The course is designed to provide principles of programming in C language.
- 2) Students will be able to develop logics which will help them to create programs, applications in C.
- 3) To provide exposure to problem solving through programming.
- 4) Also by learning the basic programming constructs they can easily switch over to any other language in future.
- 5) To study and implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

Chapter No.	Topic Name	No. of Lectures
1	<b>Concepts of programming</b> 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.	6
2	<b>Programming with C</b> 1. Structure of C program, Character set, key words, Constants and variables, Variable names, Data types and their declarations, Symbolic Constants. 2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ). 3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator.	12

	<p>4. Formatted input/output Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Function Use of Library functions: e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, Newton-Raphson method.</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule.</p>	12
<b>Total No. of Lectures</b>		<b>30</b>

**Following programs will be discussed in theory lectures:**

1. Sum of digits of an integer
2. To find factorial of a number
3. Checking and printing of prime numbers
4. Root of equation/s-Bisection method, Newton Raphson method, Gauss-Elimination Method
5. Numerical integration- Trapezoidal, Simpson's 1/3rd rule, Simpson's 3/8th rule.



### Reference Books:

1. Numerical Methods In Engineering And Science- B. S. Grewal, Mercury Learning And Information
2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.
3. Computer oriented Numerical Methods – V. Rajaraman.
4. Let Us C-Yashavant P. Kanetkar



Head

Department of Mathematics  
K. J. Somaiya College of Arts, Commerce & Science, Kopergaon



Principal

K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon



**Proposal to BCD**  
**K. J. Somaiya College of Arts, Commerce & Science, Kopargaon.**  
**Department of Mathematics**

Date: 1/11/2022

To,  
The Chairman,  
Board of Curriculum Development,  
K. J. Somaiya College, Kopargaon.

**Subject: Regarding the permission for the certificate course in Principles of Programming Language.**

Respected Sir,

Considering the skilled based requirement of students of Mathematics department. We have designed 30 contact hrs Certificate course entitled "Principles of Programming Language". It is skilled based course to understand the basic concepts in programming.


The certificate course is useful to the UG level students from Mathematics department. This is the basic knowledge course about computer programming information. We are quite sure about the success of this certificate course and desirous to start this course at diploma level next year.

The required infrastructure is available in the department. The present faculty is ready to provide such knowledge and teach to the students about the programs and its uses in the field of Mathematics.

So, I request you to please give me the permission to conduct the 30 contact hrs certificate course in the subject of Mathematics.

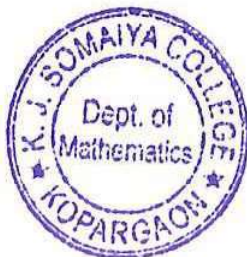
Thanking you

Your faithfully

  
Dr. B. D. Gavhane  
Head, Dept. of Mathematics

Encl: Syllabus copy of Certificate Course

Head  
Department of Mathematics  
K. J. Somaiya College, Kopargaon







Kopargaon Taluka Education Society's  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE & SCIENCE,**  
Mohaniraj nagar, Kopargaon, Tal:- Kopargaon, Dist- Ahmednagar, Maharashtra, 423601.  
Website: [www.kjcollege.com](http://www.kjcollege.com), Email- [kjcollege@rediffmail.com](mailto:kjcollege@rediffmail.com)

**ADMISSION FORM FOR CERTIFICATE COURSES**

Certificate course in the subject of \_\_\_\_\_

Name of the Certificate Course: - \_: "Principles of Programming Language"

**Personal Information**

**Name of the Student:-**

\_\_\_\_\_

**Class:-** \_\_\_\_\_

**Roll No.** \_\_\_\_\_

**Category -** \_\_\_\_\_

**Address:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Mobile No.** \_\_\_\_\_

**E- mail ID-** \_\_\_\_\_

**Last Qualification:-** \_\_\_\_\_

**Percentage:-** \_\_\_\_\_ %

**Computer Knowledge:-** Yes . / No.

**Name of the Completed Computer Course:-**

\_\_\_\_\_



## Declaration:

I am declared that, as per my knowledge the above information is true and correct.

Student Signature

## DEPARTMENTAL USE ONLY

Mr. /Miss./Mrs. \_\_\_\_\_

Class \_\_\_\_\_ is admitted in certificate course in the subject of \_\_\_\_\_

for the Period of \_\_\_\_\_ to \_\_\_\_\_, And his / her roll no is \_\_\_\_\_ for this course.

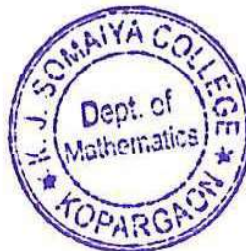
Date:-     /     / 20

Head,

Department of Mathematics

Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon

Dept. Seal



Principal

Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON

Mohaniraj nagar, Kopargaon. 423601

Certificate Course: Principles of programming language

Time- 1Hrs (2.00 To 3.00 PM)

Date- 28/03/23

Max. Marks – 50

Que. –Attempt any TWENTY FIVE of the following questions (50)

- 1) Use Bisection Method to find out the root of  $x - \sin x - 0.5 = 0$  between 1 and 2.
  - a) 1.497
  - b) 1.947
  - c) 1.479
  - d) 1.974
- 2) The \_\_\_\_\_ provides pictorial representation of given problem
  - a) Algorithm
  - b) . Flowchart
  - c) . Pseudocode
  - d) All of these
- 3) Using Bisection method find the root of  $\cos(x) - xe^x = 0$  with  $a = 0$  and  $b = 1$ .
  - a) 0.617
  - b) 0.517
  - c) 0.417
  - d) 0.550
- 4) The address operator &, cannot act on.....
  - a) R-values
  - b) Arithmetic expressions
  - c) Both of the above
  - d) Local variables
- 5) The act of initializing array is also called as \_\_\_\_\_
  - a) Populating an array
  - b) Assigning array
  - c) Initializing
  - d) Factoring and array
- 6) If you have to make decision based on multiple choices, which of the following is best suited?
  - a) If
  - b) if-else
  - c) if-else-if
  - d) all of the above
- 7) The continue statement cannot be used with \_\_\_\_\_
  - a) For
  - b) While
  - c) do while
  - d) switch
- 8) \_\_\_\_\_ is a procedure or step by step process for solving a problem.
  - a) Algorithm

- b) Flowchart
  - c) Pseudocode
  - d) all of these
- 9) A pointer is a.....
- a) variable that stores address of an instruction
  - b) variable that stores address of other variable
  - c) keyword used to create variables
  - d) None of these
- 10) A function is given by  $x - e^{-x} = 0$ . Find the root between  $a = 0$  and  $b = 1$  by using Bisection method.
- a) 0.655
  - b) 0.565
  - c) 0.665
  - d) 0.656
- 11) Python is said to easily .....
- a) Readable Language
  - b) Writable Language
  - c) Bug-able Language
  - d) Script able Language
- 12) A pointer variable can be
- a) Passed to a function
  - b) Changed within a function
  - c) Returned by a function
  - d) Can be assigned an integer value
- 13) What is the other name of Question Mark Colon Operator?
- a) Comparison Operator
  - b) If-Else Operator
  - c) Binary Operator
  - d) Ternary Operator
- 14) To determine whether a string has specific sequence of characters, use \_\_\_\_\_
- a) Contains method
  - b) Specific method
  - c) Sequence method
  - d) Check method
- 15) The evaluation of the definite integral  $\int_{-1}^{1.4} x \cdot |x| dx$  by using Simpson's  $\frac{1}{3}$ rd rule with step size  $h = 0.6$  yields.
- a) 0.914
  - b) 1.248
  - c) 0.581
  - d) 0.592
- 16) By Simpson's  $\frac{1}{3}$ rd rule, the value of  $\int_1^7 \frac{dx}{x}$  is ....
- a) 1.458
  - b) 1.658
  - c) 1.958

- d) 1.358
- 17) Find the positive root of the equation  $3x - \cos x - 1$  using Regula Falsi method and correct upto 4 decimal places.
- 0.6701
  - 0.5071
  - 0.6071
  - 0.5701
- 18) \_\_\_\_\_ method is used to reverse the values.
- Array.Reverse
  - Array.Sort Desc
  - Array.Sort Asc
  - Array.rev
- 19) \_\_\_\_\_ method is used to sort an array in visual basic.
- Array.arrange()
  - Array.arrayArrange()
  - Array.Sort()
  - Array.sortAscending()
- 20) Arranging data in a specific order is called as....
- Arranging
  - Sorting
  - Organizing
  - Making
- 21) The Bisection method is also known as \_\_\_\_\_
- Binary Chopping
  - Quaternary Chopping
  - Tri region Chopping
  - Hex region Chopping
- 22) Find the positive root of the equation  $x - \cos(x)$  using Regula Falsi method and correct to 4 decimal places.
- 0.73908
  - 0.63908
  - 0.74980
  - 0.64908
- 23) Simpson's  $\frac{1}{3}$ rd rule is used to integrate the function  $f(x) = \frac{3}{5}x^2 + \frac{9}{5}$  between  $x = 0$  &  $x = 1$  using the least number of equal subintervals. The value of integral is ....
- 2
  - 6
  - 4
  - 3
- 24) Using Simpson's  $\frac{1}{3}$ rd rule the value of  $\int y \, dx$  for data given below is .....

X	1	2	3
y	2	6	4

- a) 12
- b) 20
- c) 15
- d) 25

25) The Contains Method returns \_\_\_\_\_

- a) Integer
- b) Void
- c) Boolean
- d) String

26) Which operator from the following has the lowest priority?

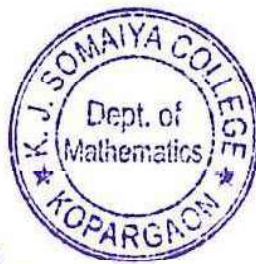
- a) Assignment Operator
- b) Division Operator
- c) Comma Operator
- d) Conditional Operator

27) What is wild pointer?

- a) Pointer which is wild in nature
- b) Pointer which has no value
- c) Pointer which is not initialized
- d) None

Head

Department of Mathematics  
K. J. Somaiya College, Kopergaon



Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon

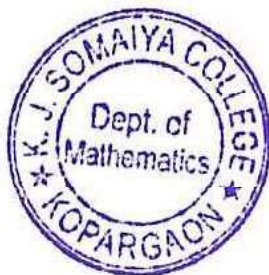
**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**  
**Certificate Course in Mathematics**  
**"Principles of Programming Language"**  
**Admitted Students for the Certificate Course Year- (2022-2023)**

Sr. No.	Name of the Students
1	BACHKAR AMOL ASHOK
2	PATHAN BUSHRA AFZALKHAN
3	RAUT TANVI KIRAN
4	DUBE VRUSHALI ARJUN
5	SHAHANE AARATI RAVINDRA
6	GURSAL ADITYA DIGAMBAR
7	DHULE VAISHNAVI DATTU
8	TURKANE PRAPTI JALINDAR
9	MULE YOGENDRA NILESH
10	BHADANE TUSHAR SURESH
11	PATHAN MUSKAN ELIYAS
12	DUKARE KARAN BABASAHEB
13	LUTE ASWINI BANDUJI
14	KHOND DHANASHRI SOMNATH
15	PAWAR KOMAL MANIK
16	PACHORE PRASHANT MACHHINDRA
17	GADHAVE BHAGYASHRI SHRIKRISHNA
18	KANKUBJI KSHITIJ DHARAM
19	ABHALE POOJA SUNIL
20	SHINDE ASHWINI RAJARAM
21	AVHALE VAISHNAVI RAVINDRA
22	DOKHE ARTI KAILAS
23	GHODAKE PRADNYA SAKHAHARI
24	THOMBARE AKSHADA HRMRAJ
25	GAVHANE PRERNA

26	MODHE BHAGYSHRI BAJIRAO
27	THORAT PRIYANKA GOVIND
28	KHARDE PRATIKSHA ASHOK
29	JADHAV GAYATRI BHISHMACHARYA
30	SHELAR PRAGATI ANNASAHEB
31	NIRMAL KOMAL RADHAKRISHNA
32	KOLHE VAISHNAVI HARICHANDRA
33	ROKADE SONALIKA BHIMRAO
34	YEOLE KALYANI SHRIRAM
35	DIKE VAISHNAVI CHANDRAKANT
36	THOMBARE SHWETA
37	ROHAMARE DNYANESHWARI SOMNATH

Dr. B. D. Gavhane  
Head, Dept. of Mathematics

Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon



Dr. B. S. Yadav  
Principal

Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon



**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,**  
**KOPARGAON**

Mohaniraj nagar, Kopargaon.423601

**Certificate Course in Mathematics**  
**"Principles of Programming Language"**  
(Computer based Practical)

**TIME TABLE- 2022-2023**

**With Effect from: 10/11/2022**

Time	Wednesday	Thursday	Friday	Saturday
2.30 To 4.30 PM.	Lect. in classroom  (S-46)	Lect. in Classroom  (S-46)	Lect. in Classroom  (S-46)	Computer lab work / practical (S-50)

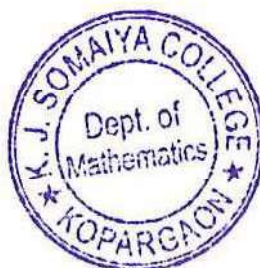
**For online Lectures:**

**See YouTube Channel Dr.B.D.Gavhane** (Links of online lectures will be shared with you)

**Name of the Teacher:-**

1. Dr.B.D.Gavhane (Mathematics Dept.)
2. Prof. R.B.Chavan (Mathematics Dept.)

Head  
Department of Mathematics  
K. J. Somaiya College, Kopargaon



Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopargaon



# K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON

## Certificate Course in Mathematics (2022-23)

"Principles of Programming Language" (Computer based Practical)

### STUDENT ATTENDANCE SHEET

Sr.No	STUDENT NAME	DATE
1	ABHALE POOJA SUNIL	10/11/22
2	AVHALE VAISHNAVI RAVINDRA	10/11/22
3	BACHKAR AMOL ASHOK	11/11/22
4	BHADANE TUSHAR SURESH	11/11/22
5	DHULE VAISHNAVI DATTU	12/11/22
6	DIKE VAISHNAVI CHANDRAKANT	12/11/22
7	DOKHE ARTI KAILAS	16/11/22
8	DUBE VRUSHALI ARJUN	16/11/22
		17/11/22
		17/11/22
		18/11/22
		18/11/22
		23/11/22
		23/11/22
		24/11/22
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		25/11/22
		25/11/22
		26/11/22
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		25/3/23



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DEPARTMENT OF MATHEMATICS

NOTICE

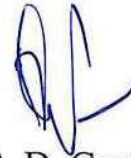
EXAMINATION IN CERTIFICATE COURSE IN MATHEMATICS

**Principles of Programming language**

20/03/2023

All the students from Certificate Course in Mathematics (Principles of Programming Language) inform you that the examination scheduled on dated **28/03/2023** at 2.00 pm online using Google Forms.

Link of online examination will be shared with you before ten minutes of commencement of examination.



Dr. B. D. Gavhane

Department of Mathematics

Department of Mathematics  
K. J. Somaiya College, Kopergaon



Principal

K. J. Somaiya College of Arts  
Commerce & Sciences, Kopergaon  
Principal

**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**  
**Certificate Course in Mathematics**  
**"Principles of Programming Language"**

**Result sheet of Certificate Course in Mathematics for the year- (2022-2023)**

Sr. No.	Name of the Students	Marks Obtained		Total	Grade
		Theory (50)	Practical (50)		
1	BACHKAR AMOL ASHOK	34	35	69	B
2	PATHAN BUSHRA AFZALKHAN	24	43	67	B
3	RAUT TANVI KIRAN	44	35	79	A
4	DUBE VRUSHALI ARJUN	44	44	88	A
5	SHAHANE AARATI RAVINDRA	34	42	76	A
6	GURSAL ADITYA DIGAMBAR	22	25	47	D
7	DHULE VAISHNAVI DATTU	30	35	65	B
8	TURKANE PRAPTI JALINDAR	26	46	72	A
9	MULE YOGENDRA NILESH	32	45	77	A
10	BHADANE TUSHAR SURESH	30	42	72	A
11	PATHAN MUSKAN ELIYAS	20	26	46	D
12	DUKARE KARAN BABASAHEB	20	23	43	D
13	LUTE ASWINI BANDUJI	22	26	46	D
14	KHOND DHANASHRI SOMNATH	14	29	43	D
15	PAWAR KOMAL MANIK	22	30	52	C
16	PACHORE PRASHANT MACHHINDRA	50	45	95	A
17	GADHAVE BHAGYASHRI SHRIKRISHNA	30	44	74	A
18	KANKUBJI KSHITIJ DHARAM	42	34	76	A
19	ABHALE POOJA SUNIL	46	45	91	A
20	SHINDE ASHWINI RAJARAM	42	34	76	A
21	AVHALE VAISHNAVI RAVINDRA	42	33	75	A
22	DOKHE ARTI KAILAS	40	40	80	A
23	GHODAKE PRADNYA SAKHAHARI	32	35	67	B
24	THOMBARE AKSHADA HRMRAJ	38	40	78	A




25	GAVHANE PRERNA	42	42	82	A
26	MODHE BHAGYSHRI BAJIRAO	44	34	78	A
27	THORAT PRIYANKA GOVIND	34	43	77	A
28	KHARDE PRATIKSHA ASHOK	46	34	80	A
29	JADHAV GAYATRI BHISHMACHARYA	42	33	75	A
30	SHELAR PRAGATI ANNASAHEB	42	29	71	A
31	NIRMAL KOMAL RADHAKRISHNA	26	43	69	A
32	KOLHE VAISHNAVI HARICHANDRA	32	42	74	A
33	ROKADE SONALIKA BHIMRAO	48	43	91	A
34	YEOLE KALYANI SHRIRAM	38	42	80	A
35	DIKE VAISHNAVI CHANDRAKANT	28	28	56	C
36	THOMBARE SHWETA	14	35	49	D
37	ROHAMARE DNYANESHWARI SOMNATH	50	42	92	A

1. Name and Signature of the Subject Teacher


  
Dr. B. D. Gavhane

2. Name and Signature of the Subject Teacher

  
Prof. R.B. Chavan

  
Dr. B. D. Gavhane  
Head, Dept. of Mathematics  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon



  
Dr. B. S. Yadav  
Principal  
Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon



**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**

**Department of Mathematics  
Academic year 2022-23**

**Report**

<b>Name of the certificate course</b>	Principles of programming language
<b>Date and Duration</b>	10/11/2022 to 25/03/2023 30 Hours
<b>Name of faculty</b>	Dr. B.D. Gavhane Mr. R.B. Chavan
<b>Number of participants enrolled</b>	37
<b>Venue</b>	Department of Mathematics

**Brief summary of activity/Event:**

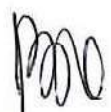
Department of Mathematics runs a certificate course "Principles of programming language". The objective of the course is to develop logics that will help students to create programs. It also aims to provide exposure to problem-solving through programming. Head of the department Dr. B.D. Gavhane inaugurated this course.

The course content is made available to students. The students learn about programming language and solve mathematical problems using programs. Students studied the implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

**The outcome of activity/Event:**

1. Developed logic that helped students to create programs.
2. Students learned the basic programming constructs they can easily switch over to any other language in the future.

  
**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopargaon**

  
**Principal**  
**K. J. Somaiya College of Arts**  
**Commerce & Science, Kopargaon**



Kopargaon Taluka Education Society's  
**K.J.Somaiya College of Arts, Commerce & Science**

Mohanirajnagar, Kopargaon, Dist: Ahmednagar 423601

**Certificate Course**

On

**“Principles of Programming Language”**


Organized By


**Department of Mathematics**


**Certificate**

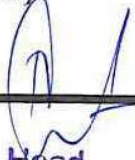


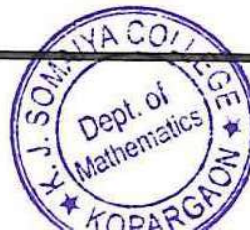
This is to certify that, \_\_\_\_\_  
has successfully completed the certificate course on ‘Principles of Programming  
Language’ in the academic year —/—.


  
**Dr. B.D. Gavhane**  
HOD (Mathematics)

  
**Dr. B.B. Bhosale**  
Science faculty I/C

  
**Dr. B.S. Yadav**  
Principal

  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopargaon



  
Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopargaon



Kopargaon Taluka Education Society's

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,  
KOPARGAON

Mohaniraj nagar, Kopargaon.423601

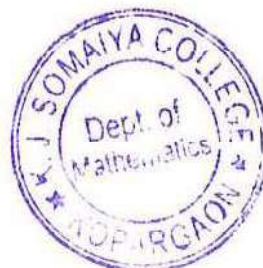
**Organized by**  
**DEPARTMENT OF MATHEMATICS**

CERTIFICATE COURSE  
IN MATHEMATICS

**“Principles of Programming Language”**

Course Code- CC.004

Year of Commencement: 2019-20





## Certificate Course in MATHEMATICS

2021-22

-: Name of the Certificate Course:-

### **“Principles of Programming Language”**

(Computer based Practical)

Designed By: -	Department of MATHEMATICS
Nature of Course: -	Theory + Practical (Computer based)
Duration: -	Two Months
Eligibility:-	12 <sup>th</sup> Pass
Course Fee: -	Nil - Rs. per Student
Capacity: -	Min. 20 Students per batch
Total Lectures: -	30 lectures


#### Evaluation Process:- Grade System (Marks Converted into Grade)

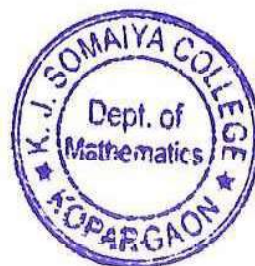
➤ Theory exam.-	50 Marks
➤ Practical & Exercises.-	50 Marks
<b>Total Marks: -</b>	<b>100 Marks</b>

#### Grade System:-

1. 'A' Grade – More than 70 Marks
2. 'B' Grade – 60 to 70 Marks
3. 'C' Grade – 50 to 60 Marks
4. 'D' Grade – 40 to 50 Marks

Passing: - Obtained 40% Marks

  
Coordinator: - Dr. B. D. Gavhane  
Head, Dept. of Mathematics  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon



  
Principal  
K. J. Somaiya College  
Kopergaon

**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**


**Department of Mathematics  
2021-22**

1	<b>Name of Department</b>		Mathematics
2	<b>Title of Course</b>		Principles of programming language
3	<b>Course Level</b>		Certificate
4	<b>Implementation academic year</b>		Since 2019-20
5	<b>Preamble of Syllabus</b>		1. Concepts of programming 2. Programming with C 3. Computational numerical methods
6	<b>Faculty of the Course</b>		Science
7	<b>Eligibility of Admission and prerequisite</b>		12 <sup>th</sup> Science Pass
8	<b>Duration of the Course</b>		30 days
9	<b>Intake capacity of students</b>		60
10	<b>Total hours of teaching</b>		30
11	<b>Pattern of examination, if any</b>		
	<b>Theory exam, Practical and exercises</b>		Theory and practical exam at the end of the course.
12	<b>Teaching Faculty</b>		
	<b>Name of Faculty</b>	<b>Designation</b>	<b>Qualification</b>
	Dr. B.D. Gavhane	Assistant Professor	M.Sc., Ph.D., Mathematics
	Mr. P.G. Gudaghe	Assistant Professor	M.C.A.
13	<b>Other Facilities</b>		Computer Laboratory, Library
14	<b>Recommended books</b>		
	1. Numerical Methods In Engineering And Science- B. S. Grewal, Mercury Learning And Information		
	2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.		
	3. Let Us C-Yashavant P. Kanetkar		
15	<b>Detailed Syllabus</b>		
<b>Sr. No.</b>	<b>Topic Name</b>		<b>No. of Lectures</b>
1	<b>Concepts of programming</b> 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.		6
2	<b>Programming with C</b> 1. Structure of C program, Character set, key words, Constants and variables, Variable names, Data types and their declarations, Symbolic Constants.		12

	<p>2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ).</p> <p>3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator. Formatted input and formatted Console, Loop control structures.</p> <p>4. Formatted input/output Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Function Use of Library functions: e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, False Position Method, Newton- Raphson method, Gauss-Elimination Method, Gauss-Jordon Elimination Method.</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule.</p>	12
<b>Total No. of Lectures</b>		<b>30</b>



**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopargaon**



**Principal**  
**K. J. Somaiya College of Arts**  
**Commerce & Science, Kopargaon**

# Syllabus

Department of Mathematics

Certificate Course: "Principles of Programming Language"

(Computer based Practical)

Syllabus: 2021-22

## Objectives:

- 1) The course is designed to provide principles of programming in C language.
- 2) Students will be able to develop logics which will help them to create programs, applications in C.
- 3) To provide exposure to problem solving through programming.
- 4) Also by learning the basic programming constructs they can easily switch over to any other language in future.
- 5) To study and implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

Chapter No.	Topic Name	No. of Lectures
1	<b>Concepts of programming</b> 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.	6
2	<b>Programming with C</b> 1. Structure of C program, Character set, key words, Constants and variables, Variable names, Data types and their declarations, Symbolic Constants. 2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ). 3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment	12

	<p>Operators, Conditional Operator. Formatted input and formatted Console, Loop control structures.</p> <p>4. Formatted input/output</p> <p>Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Function</p> <p>Use of Library functions: e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, False Position Method, Newton- Raphson method, Gauss-Elimination Method, Gauss-Jordon Elimination Method.</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule.</p>	12
<b>Total No. of Lectures</b>		<b>30</b>

**Following programs will be discussed in theory lectures:**

1. Sum of digits of an integer
2. To find factorial of a number
3. Checking and printing of prime numbers
4. Root of equation/s-Bisection method, Newton Raphson method, Gauss-Elimination Method
5. Numerical integration- Trapezoidal, Simpson's 1/3rd rule, Simpson's 3/8th rule.




**Reference Books:**

1. Numerical Methods In Engineering And Science- B. S. Grewal, Mercury Learning And Information
2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.
3. Let Us C-Yashavant P. Kanetkar



**Head**  
Department of Mathematics  
K. J. Somaiya College, Kopergaon



**Principal**  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon



**Proposal to BCD**

**K. J. Somaiya College of Arts, Commerce & Science, Kopergaon.**

**Department of Mathematics**

Date: 18/02/2022

To,  
The Chairman,  
Board of Curriculum Development,  
K. J. Somaiya College, Kopergaon.

**Subject: Regarding the permission for the certificate course in Principles of Programming Language.**

Respected Sir,

Considering the skilled based requirement of students of Mathematics department. We have designed 30 contact hrs Certificate course entitled "Principles of Programming Language". It is skilled based course to understand the basic concepts in programming.


The certificate course is useful to the UG level students from Mathematics department. This is the basic knowledge course about computer programming information. We are quite sure about the success of this certificate course and desirous to start this course at diploma level next year.

The required infrastructure is available in the department. The present faculty is ready to provide such knowledge and teach to the students about the programs and its uses in the field of Mathematics.

So, I request you to please give me the permission to conduct the 30 contact hrs certificate course in the subject of Mathematics.

Thanking you.

Your faithfully,

  
Dr. B. D. Gavhane  
Head, Dept. of Mathematics  
Head

**Department of Mathematics**  
**K. J. Somaiya College, Kopergaon**

Encl: Syllabus copy of Certificate Course.



Kopargaon Taluka Education Society's

## K.J. Somaiya College of Arts, Commerce & Science

Mohanirajnagar, Kopargaon - 423601, Dist. Ahmednagar (MH.)

Affiliated to Savitribai Phule Pune University, Pune ID No. PU/AN/ASC/07(1964)

☎ : 9146142000, 9146152000 Email ID : kjscollege@rediffmail.com, Website : kjscollege.com

NAAC ACCREDITED 'A' GRADE

AN ISO 9001-2015 CERTIFIED INSTITUTE

SAVITRIBAI PHULE PUNE UNIVERSITY "BEST COLLEGE AWARD"

Principal : Dr. B. S. Yadav (M.Sc., Ph.D.)

Founder President : Late K. B. Rohamare (Ex. M.L.A.)

Ref. No. :

Date : / / 2022  
Date: 20/02/2022

### Board of Curriculum Development

To,  
Head of the Department,  
Department of Mathematics,  
K. J. Somaiya College, Kopargaon.

**Subject: Permission for the certificate course in Mathematics**

Respected sir,

As per your application dated 18/02/2022. The members of BCD conducted a meeting and after thorough discussion we have decided to accept your proposal of certificate course 'Principles of Programming Language' in Mathematics. The Committee has permitted to Department of Mathematics for 30 contact hrs. Certificate course 'Principles of Programming Language' under following conditions.

The Term and Condition are follows:

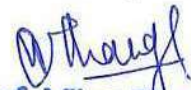
1. Syllabus to be completed in stipulated time.
2. Conduct Theory examination at the end of the course.
3. Minimum 15 admissions are permissible for conducting the course.


Members of the committee -

- |                        |                            |
|------------------------|----------------------------|
| 1. Dr. B. S. Yadav     | 2. Dr. S. R. Pagare        |
| 3. Prof. V. C. Thange  | 4. Prin. Dr. Goswami       |
| 5. Prin. Dr. Gurasal   | 6. Dr. B. B. Bhosale       |
| 7. Dr. S. B. Kale      | 8. Dr. G. K. Chavhan       |
| 9. Smt. N. B. Shinde   | 10. Prof. P. S. Bhadane    |
| 11. Shri. Sachin Ingle | 12. Shri Satyajeet Gondkar |

Copy to-

1. IQAC, KJS College.
2. Head, Dept. of Mathematics
3. Account Officer, KJS College

  
**Prof. Vijay Thange**  
Co-ordinator, IQAC  
K. J. Somaiya College, Kopargaon

  
**Dr. B. S. Yadav**  
Principal

Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopargaon





Kopargaon Taluka Education Society's  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE & SCIENCE,**  
Mohaniraj nagar, Kopargaon, Tal:- Kopargaon, Dist- Ahmednagar, Maharashtra, 423601.  
Website: [www.kjcollege.com](http://www.kjcollege.com), Email- [kjcollege@rediffmail.com](mailto:kjcollege@rediffmail.com)

**ADMISSION FORM FOR CERTIFICATE COURSES**

Certificate course in the subject of \_\_\_\_\_

Name of the Certificate Course: - \_: "Principles of Programming Language"

**Personal Information**

Name of the Student:-

\_\_\_\_\_

Class:- \_\_\_\_\_

Roll No. \_\_\_\_\_

Category - \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Mobile No. \_\_\_\_\_

E- mail ID- \_\_\_\_\_

Last Qualification:- \_\_\_\_\_

Percentage:- \_\_\_\_\_ %

Computer Knowledge:- Yes . / No.

Name of the Completed Computer Course:-

\_\_\_\_\_



Declaration:

I am declared that, as per my knowledge the above information is true and correct.

Student Signature

DEPARTMENTAL USE ONLY

Mr. /Miss./Mrs. \_\_\_\_\_

Class \_\_\_\_\_ is admitted in certificate course in the subject of \_\_\_\_\_

for the Period of \_\_\_\_\_ to \_\_\_\_\_, And his / her roll no is

\_\_\_\_\_ for this course.

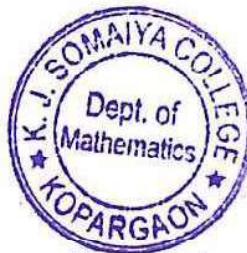
Date:-     /     / 20

Head,

Department of Mathematics

Head

Department of Mathematics  
K. J. Somaiya College, Kopergaon



Dept. Seal

Principal

Principal

K.J.Somaiya College  
Kopergaon

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON  
Mohaniraj nagar, Kopargaon. 423601  
2021-22 Certificate Course: Principles of programming language

Time- 1Hrs (9.00 To 10.00AM)

Date- 25/04/2022

Max. Marks – 50

- 
- 1) The \_\_\_\_\_ provides pictorial representation of given problem
    - a) Algorithm
    - b) . Flowchart
    - c) . Pseudocode
    - d) All of these
  - 2) \_\_\_\_\_ is a procedure or step by step process for solving a problem.
    - a) Algorithm
    - b) Flowchart
    - c) Pseudocode
    - d) all of these
  - 3) Use Bisection Method to find out the root of  $x - \sin x - 0.5 = 0$  between 1 and 2.
    - a) 1.497
    - b) 1.947
    - c) 1.479
    - d) 1.974
  - 4) A function is given by  $x - e^{-x} = 0$ . Find the root between  $a = 0$  and  $b = 1$  by using Bisection method.
    - a) 0.655
    - b) 0.565
    - c) 0.665
    - d) 0.656
  - 5) Using Bisection method find the root of  $\cos(x) - xe^x = 0$  with  $a = 0$  and  $b = 1$ .
    - a) 0.617
    - b) 0.517
    - c) 0.417
    - d) 0.550
  - 6) The address operator &, cannot act on.....
    - a) R-values
    - b) Arithmetic expressions
    - c) Both of the above
    - d) Local variables
  - 7) A pointer is a.....
    - a) variable that stores address of an instruction
    - b) variable that stores address of other variable
    - c) keyword used to create variables
    - d) None of these
  - 8) The continue statement cannot be used with \_\_\_\_\_
    - a) For
    - b) While



- c) do while
  - d) switch
- 9) If you have to make decision based on multiple choices, which of the following is best suited?
- a) If
  - b) if-else
  - c) if-else-if
  - d) all of the above
- 10) The act of initializing array is also called as \_\_\_\_\_
- a) Populating an array
  - b) Assigning array
  - c) Initializing
  - d) Factoring and array
- 11) \_\_\_\_\_ method is used to sort an array in visual basic.
- a) Array.arrange()
  - b) Array.arrayArrange()
  - c) Array.Sort()
  - d) Array.sortAscending()
- 12) Arranging data in a specific order is called as....
- a) Arranging
  - b) Sorting
  - c) Organizing
  - d) Making
- 13) \_\_\_\_\_ method is used to reverse the values.
- a) Array.Reverse
  - b) Array.Sort Desc
  - c) Array.Sort Asc
  - d) Array.rev
- 14) The Bisection method is also known as \_\_\_\_\_
- a) Binary Chopping
  - b) Quaternary Chopping
  - c) Tri region Chopping
  - d) Hex region Chopping
- 15) Find the positive root of the equation  $3x - \cos x - 1$  using Regula Falsi method and correct upto 4 decimal places.
- a) 0.6701
  - b) 0.5071
  - c) 0.6071
  - d) 0.5701
- 16) Find the positive root of the equation  $x - \cos(x)$  using Regula Falsi method and correct to 4 decimal places.
- a) 0.73908
  - b) 0.63908
  - c) 0.74980
  - d) 0.64908

17) By Simpson's  $\frac{1}{3}$ rd rule, the value of  $\int_1^7 \frac{dx}{x}$  is ....

- a) 1.458
- b) 1.658
- c) 1.958
- d) 1.358

18) Simpson's  $\frac{1}{3}$ rd rule is used to integrate the function  $f(x) = \frac{3}{5}x^2 + \frac{9}{5}$  between  $x = 0$  &  $x = 1$  using the least number of equal subintervals. The value of integral is ....

- a) 2
- b) 6
- c) 4
- d) 3

19) The evaluation of the definite integral  $\int_{-1}^{1.4} x \cdot |x| dx$  by using Simpson's  $\frac{1}{3}$ rd rule with step size  $h = 0.6$  yields.

- a) 0.914
- b) 1.248
- c) 0.581
- d) 0.592

20) Using Simpson's  $\frac{1}{3}$ rd rule the value of  $\int y dx$  for data given below is ....

X	1	2	3
y	2	6	4

- a) 12
- b) 20
- c) 15
- d) 25

21) To determine whether a string has specific sequence of characters, use \_\_\_\_\_

- a) Contains method
- b) Specific method
- c) Sequence method
- d) Check method

22) The Contains Method returns \_\_\_\_\_

- a) Integer
- b) Void
- c) Boolean
- d) String

23) What is the other name of Question Mark Colon Operator?

- a) Comparison Operator
- b) If-Else Operator
- c) Binary Operator
- d) Ternary Operator

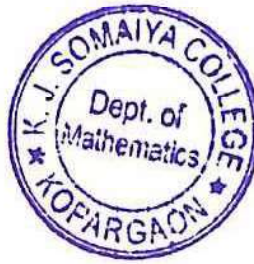
24) Which operator from the following has the lowest priority?

- a) Assignment Operator

- b) Division Operator
  - c) Comma Operator
  - d) Conditional Operator
- 25) A pointer variable can be
- a) Passed to a function
  - b) Changed within a function
  - c) Returned by a function
  - d) Can be assigned an integer value
- 26) What is wild pointer?
- a) Pointer which is wild in nature
  - b) Pointer which has no value
  - c) Pointer which is not initialized
  - d) None
- 27) Python is said to easily .....
- a) Readable Language
  - b) Writable Language
  - c) Bug-able Language
  - d) Script able Language



Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon



Principal  
K.J.Somaiya College  
Kopergaon

**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**  
**Certificate Course in Mathematics**  
**"Principles of Programming Language"**  
**Admitted Students for the Certificate Course Year- (2021-2022)**

Sr. No.	Name of the Students
1	ABHALE POOJA SUNIL
2	ABHALE SAMPADA SUNIL
3	BACHAKAR AMOL ASHOK
4	BHARUD SONALI RAMAN
5	BHOKARE DIVYA RAJENDRA
6	BORNARE SAKSHI SANJAY.
7	CHAUDHARI ABHISHEK RAMESH
8	DAHE AKSHADA BAPUSAHEB
9	DEOKAR VARSHA VILAS
10	DHAMALE PRITI CHANDRAKANT
11	DHULE VAISHNAVI DATTU.
12	DIKE VAISHNAVI CHANDRAKANT
13	DVENDRA KACHARU LOHAKARE
14	GADHAVE BHAGYASHRI SHRIKRISHNA
15	GHODAKE PRADNYA SAKHAHARI
16	GOSAVI SAKSHI POPAT
17	HOLE TEJAS VIJAY
18	JADHAV GAYATRI BHISHMACHARYA
19	JAMDHADE AISHWARYA VIJAY
20	JAWALE RUTUJA RAJARAM
21	JAWALE SAKSHI PANDIT
22	JOSHI ATHARV CHANDRASHEKHAR
23	KALOKHE ARCHANA UTTAM
24	KASHID SNEHAL RAJENDRA
25	KHALKAR RAJASHRI SUNIL


Principal  
K. J. Somaiya C. S. College  
Kopergaon

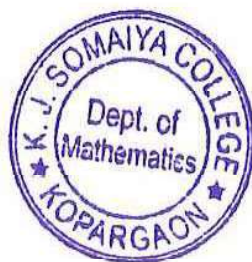



Principal  
Department of Mathematics  
K. J. Somaiya C. S. College, Kopergaon



26	KHARAT VAISHALI SHIVAJI
27	KOLHE VAISHNAVI HARICHANDRA
28	KOTE ADITI SAMBHAJI
29	MEHETRE SOHAM SANTOSH
30	MORE ARTI SUNIL
31	MULE YOGENDRA NILESH
32	NIKAM JANA VI DILIP
33	PACHORE PRASHANT MACHHINDRA
34	PACHORE PRIYA RAJENDRA
35	PACHORE PRIYA RAJENDRA
36	PACHPIND BHAGYASHREE KALAS
37	PARADE KALYANI RAOSAHEB
38	PAWAR NIKITA SOPAN
39	PRATIKSHA ASHOK KHARDE
40	RAHANE SHWETA APPASAHEB
41	RANSHING DIYA PRAMOD
42	ROHIT NIKAM VILAS
43	SHAHANE AARATI RAVINDRA
44	SHAIKH AAYESHABI HASHAM
45	SHAIKH MAYESARA YAKUB
46	SHAIKH MUBASHSHIRA AZIMUDDIN
47	SHAIKH SABA ALMAS MAQSOOD AHMED
48	SHELAR PRAGATI ANNASAHEB
49	SHINDE SONALI GOVIND
50	SURVE DNYANESHWARI RAJENDRA
51	THORAT PRIYANKA GOVIND
52	THORAT SAKSHI MACHHINDRA

  
 Dr. B. D. Gavhane  
 Head, Dept. of Mathematics  
 Head  
 Department of Mathematics  
 K. J. Somaiya College, Kopergaon



  
 Dr. B. S. Yadav  
 Principal  
 Principal  
 K.J.Somaiya C. "Kopergaon"  
 Kopergaon

**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,**  
**KOPARGAON**

Mohansiraj nagar, Kopargaon.423601

**Certificate Course in Mathematics**  
**“Principles of Programming Language”**  
(Computer based Practical)

**TIME TABLE- 2021-2022**

**With Effect from: 11/03/2022**


Time	Wednesday	Thursday	Friday	Saturday
1.30 To 2.30 PM.	Lect. in classroom  (S-46)	Lect. in Classroom  (S-46)	Lect. in Classroom  (S-46)	Computer lab work / practical (S-50)

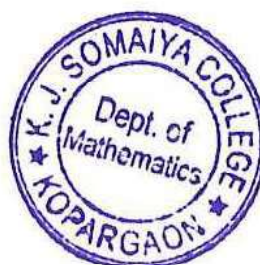
**For online Lectures:**

**See YouTube Channel Dr.B.D.Gavhane** (Links of online lectures will be shared with you)

**Name of the Teacher:-**

1. Dr.B.D.Gavhane (Mathematics)
2. Prof. Gudaghe Sir (Computer Science)

  
**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopargaon**



  
**Principal**  
**K.J.Somaiya College**  
**Kopargaon**



# K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON

## Certificate Course in Mathematics(2021-22)

“Principles of Programming Language”(Computer based Practical)

### STUDENT ATTENDANCE SHEET

Sr.No	STUDENT NAME	DATE
1	ABHALE POOJA SUNIL	11/4/22
2	ABHALE SAMPADA SUNIL	11/4/22
3	BACHAKAR AMOL ASHOK	12/4/22
4	BHARUD SONALI RAMAN	12/4/22
5	BHOKARE DIVYA RAJENDRA	14/4/22
6	BORNARE SAKSHI SANJAY.	10/4/22
		17/4/22
		17/4/22
		18/4/22
		19/4/22
		19/4/22
		21/4/22
		21/4/22
		22/4/22
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		23/4/22
		26/4/22
		26/4/22
		29/4/22
		29/4/22
		30/4/22
		30/4/22
		4/5/22
		4/5/22
		5/5/22
		5/5/22



7	CHAUDHARI ABHISHEK RAMESH		Chaudhari
8	DAHE AKSHADA BAPUSAHEB		Dahab
9	DEOKAR VARSHA VILAS		Deokar
10	DHAMALE PRITI CHANDRAKANT		Dhamale
11	DHULE VAISHNAVI DATTU.		Dhule
12	DIKE VAISHNAVI CHANDRAKANT		Dike
13	DVENDRA KACHARU LOHAKARE		Dekare
14	GADHAVE BHAGYASHRI SHRIKRISHNA		Gadhav
15	GHODAKE PRADNYA SAKHAHARI		Ghodake
16	GOSAVI SAKSHI POPAT		Gosavi



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**DEPARTMENT OF MATHEMATICS**

**NOTICE**

**EXAMINATION IN CERTIFICATE COURSE IN MATHEMATICS**


**Principles of Programming language**

20/04/2022

All the students from Certificate Course in Mathematics (Principles of Programming Language) inform you that the examination scheduled on dated **25/04/2022** at 12.30 pm online using Google Forms.

Link of online examination will be shared with you before ten minutes of commencement of examination.

  
Principal  
**K.J.Somaiya College**  
**Kopargaon**


  
Dr. B. D. Gavhane  
Department of Mathematics  
Head  
Department of Mathematics  
**K. J. Somaiya College, Kopargaon**

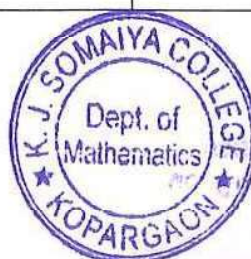
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**

Department of Mathematics

**Result sheet of Certificate Course in Mathematics for the year- (2021-2022)**

SR. NO	STUDENT NAME	CLASS	Marks Obtained		Total	Grade
			Theory(50)	Practical(50)		
1	ABHALE POOJA SUNIL	F.Y.B.Sc.	44	35	79	A
2	ABHALE SAMPADA SUNIL	T.Y.B.Sc.	48	34	82	A
3	BACHAKAR AMOL ASHOK	S.Y.B.Sc.	34	30	64	B
4	BHARUD SONALI RAMAN	T.Y.B.Sc.	36	26	62	B
5	BHOKARE DIVYA RAJENDRA	F.Y.B.Sc.	38	27	65	B
6	BORNARE SAKSHI SANJAY.	T.Y.B.Sc.	34	27	61	B
7	CHAUDHARI ABHISHEK RAMESH	S.Y.B.Sc.	34	29	63	B
8	DAHE AKSHADA BAPUSAHEB	T.Y.B.Sc.	48	42	90	A
9	DEOKAR VARSHA VILAS	F.Y.B.Sc.	34	32	66	B
10	DHAMALE PRITI CHANDRAKANT	F.Y.B.Sc.	38	30	68	B
11	DHULE VAISHNAVI DATTU.	S.Y.B.Sc.	44	39	83	A
12	DIKE VAISHNAVI CHANDRAKANT	S.Y.B.Sc.	42	38	80	A
13	DVENDRA KACHARU LOHAKARE	F.Y.B.Sc.	44	38	82	A
14	GADHAVE BHAGYASHRI SHRIKRISHNA	F.Y.B.Sc.	32	22	54	C
15	GHODAKE PRADNYA SAKHAHARI	F.Y.B.Sc.	32	26	58	C
16	GOSAVI SAKSHI POPAT	T.Y.B.Sc.	42	30	72	A
17	HOLE TEJAS VIJAY	S.Y.B.Sc.	28	24	52	C
18	JADHAV GAYATRI BHISHMACHARYA	F.Y.B.Sc.	30	30	60	B

  
 Head  
 K.J. Somaiya College  
 Kopergaon



Principal  
 K.J. Somaiya College  
 Kopergaon

19	JAMDHADE AISHWARYA VIJAY	S.Y.B.Sc.	38	32	70	A
20	JAWALE RUTUJA RAJARAM	T.Y.B.Sc.	40	32	72	A
21	JAWALE SAKSHI PANDIT	T.Y.B.Sc.	36	31	67	B
22	JOSHI ATHARV CHANDRASHEKHAR	F.Y.B.Sc.	44	40	84	A
23	KALOKHE ARCHANA UTTAM	T.Y.B.Sc.	34	39	73	A
24	KASHID SNEHAL RAJENDRA	S.Y.B.Sc.	46	34	80	A
25	KHALKAR RAJASHRI SUNIL	S.Y.B.Sc.	44	32	76	A
26	KHARAT VAISHALI SHIVAJI	T.Y.B.Sc.	34	28	62	B
27	KOLHE VAISHNAVI HARICHANDRA	F.Y.B.Sc.	32	29	61	B
28	KOTE ADITI SAMBHAJI	S.Y.B.Sc.	34	30	64	B
29	MEHETRE SOHAM SANTOSH	F.Y.B.Sc.	50	40	90	A
30	MORE ARTI SUNIL	F.Y.B.Sc.	44	41	85	A
31	MULE YOGENDRA NILESH	S.Y.B.Sc.	32	27	59	C
32	NIKAM JANAVI DILIP	T.Y.B.Sc.	46	35	81	A
33	PACHORE PRASHANT MACHHINDRA	F.Y.B.Sc.	46	36	82	A
34	PACHORE PRIYA RAJENDRA	F.Y.B.Sc.	40	32	72	A
35	PACHORE PRIYA RAJENDRA	F.Y.B.Sc.	50	44	94	A
36	PACHPIND BHAGYASHREE KALAS	S.Y.B.Sc.	26	25	51	C
37	PARADE KALYANI RAOSAHEB	S.Y.B.Sc.	34	30	64	B
38	PAWAR NIKITA SOPAN	F.Y.B.Sc.	44	35	79	A
39	PRATIKSHA ASHOK KHARDE	F.Y.B.Sc.	34	28	62	B
40	RAHANE SHWETA APPASAHEB	S.Y.B.Sc.	48	40	88	A
41	RANSHING DIYA PRAMOD	F.Y.B.Sc.	40	36	76	A

Head  
Department of Mathematics  
K. J. Somaiya College, Kopargaoon

Principal  
K.J.Somaiya College  
Kopargaoon




42	ROHIT NIKAM VILAS	F.Y.B.Sc.	32	29	61	B
43	SHAHANE AARATI RAVINDRA	S.Y.B.Sc.	50	43	93	A
44	SHAIKH AAYESHABI HASHAM	T.Y.B.Sc.	44	41	85	A
45	SHAIKH MAYESARA YAKUB	T.Y.B.Sc.	44	29	73	A
46	SHAIKH MUBASHSHIRA AZIMUDDIN	T.Y.B.Sc.	46	28	74	A
47	SHAIKH SABA ALMAS MAQSOOD AHMED	S.Y.B.Sc.	44	34	78	A
48	SHELAR PRAGATI ANNASAHEB	F.Y.B.Sc.	46	29	75	A
49	SHINDE SONALI GOVIND	F.Y.B.Sc.	36	27	63	B
50	SURVE DNYANESHWARI RAJENDRA	S.Y.B.Sc.	34	24	58	C
51	THORAT PRIYANKA GOVIND	F.Y.B.Sc.	42	31	73	A
52	THORAT SAKSHI MACHHINDRA	F.Y.B.Sc.	42	29	71	A

1. Name and Signature of the Subject Teacher



Dr. B. D. Gavhane

2. Name and Signature of the Subject Teacher



Prof. Gudhghe P.G.

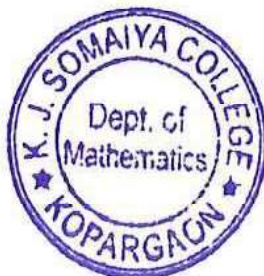


Dr. B. D. Gavhane

Head, Dept. of Mathematics

Head

Department of Mathematics  
K. J. Somaiya College, Kopergaon




Dr. B. S. Yadav

Principal

Principal

K.J. Somaiya College  
Kopergaon



**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**

**Department of Mathematics  
Academic year 2021-22**

**Report**

<b>Name of the certificate course</b>	Principles of programming language
<b>Date and Duration</b>	11/04/2022 to 05/05/2022 30 Hours
<b>Name of faculty</b>	Dr.B.D. Gavhane Mr. P.G. Gudaghe
<b>Number of participants enrolled</b>	52
<b>Venue</b>	Department of Mathematics

**Brief summary of activity/Event:**


Department of Mathematics runs a certificate course "Principles of programming language". The objective of the course is to develop logics that will help students to create programs. It also aims to provide exposure to problem-solving through programming. Head of the department Dr. B.D. Gavhane inaugurated this course.

The course content is made available to students. The students learn about programming language and solve mathematical problems using programs. Students studied the implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

**The outcome of activity/Event:**

1. Developed logic that helped students to create programs.
2. Students learned the basic programming constructs they can easily switch over to any other language in the future.

  
**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopergaon**

  
**Principal**  
**K. J. Somaiya College of Arts**  
**Commerce & Science, Kopergaon**



Kopargaon Taluka Education Society's  
**K.J.Somaiya College of Arts, Commerce & Science**

Mohanirajnagar, Kopargaon, Dist: Ahmednagar 423601

**Certificate Course**

On

**“Principles of Programming Language”**

Organized By

**Department of Mathematics**

**Certificate**



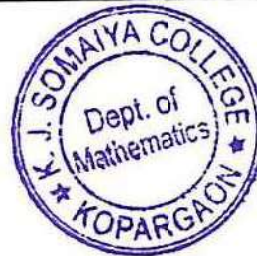
This is to certify that, \_\_\_\_\_  
has successfully completed the certificate course on 'Principles of Programming  
Language' in the academic year —/—.

**Dr. B.D. Gavhane**  
HOD (Mathematics)

**Dr. B.B. Bhosale**  
Science faculty I/C

**Dr. B.S. Yadav**  
Principal

**Head**  
Department of Mathematics  
K. J. Somaiya College, Kopargaon



**Principal**  
K.J. Somaiya College  
Kopargaon



Kopargaon Taluka Education Society's

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,  
KOPARGAON

Mohaniraj nagar, Kopargaon.423601

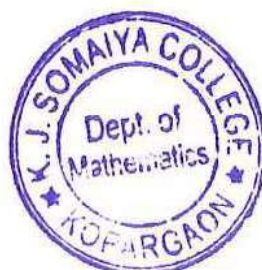
**Organized by**  
**DEPARTMENT OF MATHEMATICS**

CERTIFICATE COURSE  
IN MATHEMATICS

**“Principles of Programming Language”**

**Course Code- CC.004**

**Year of Commencement: 2019-20**







Kopargaon Taluka Education Society's

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,  
KOPARGAON

Mohaniraj nagar, Kopargaon.423601

**Organized by**  
**DEPARTMENT OF MATHEMATICS**

CERTIFICATE COURSE  
IN MATHEMATICS

**“Principles of Programming Language”**



**Year of Commencement: 2019-20**



## Certificate Course in MATHEMATICS

2020-21

-: Name of the Certificate Course:-

### **"Principles of Programming Language"**

(Computer based Practical)

Designed By: -	Department of MATHEMATICS
Nature of Course: -	Theory + Practical (Computer based)
Duration: -	Two Months
Eligibility:-	12 <sup>th</sup> Pass
Course Fee: -	100/- Rs. per Student
Capacity: -	Min. 20 Students per batch
Total Lectures: -	30 lectures

#### Evaluation Process:- Grade System (Marks Converted into Grade)

➤ Theory exam.-	50 Marks
➤ Practical & Exercises.-	50 Marks
<b>Total Marks: -</b>	<b>100 Marks</b>

#### Grade System:-

1. 'A' Grade – More than 70 Marks
2. 'B' Grade – 60 to 70 Marks
3. 'C' Grade – 50 to 60 Marks
4. 'D' Grade – 40 to 50 Marks

Passing: - Obtained 40% Marks

Coordinator: - Dr. B. D. Gavhane  
Head, Dept. of Mathematics

Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon

Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon

**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**

**Department of Mathematics**

**2020-21**

1	Name of Department		Mathematics
2	Title of Course		Principles of programming language
3	Course Level		Certificate
4	Implementation academic year		Since 2019-20
5	Preamble of Syllabus		1. Concepts of programming 2. Programming with C 3. Computational numerical methods
6	Faculty of the Course		Science
7	Eligibility of Admission and prerequisite		12 <sup>th</sup> Science Pass
8	Duration of the Course		30 days
9	Intake capacity of students		60
10	Total hours of teaching		30
11	Pattern of examination, if any		
	Theory exam, Practical and exercises		Theory and practical exam at the end of the course.
12	Teaching Faculty		
	Name of Faculty	Designation	Qualification
	Dr. B.D. Gavhane	Assistant Professor	M.Sc.,Ph.D., Mathematics
	Mr. G.M. Kunjir	Assistant Professor	M.Sc. Computer Science
13	Other Facilities		Computer Laboratory, Library
14	Recommended books		
	1. Numerical Methods In Engineering And Science- B.S.Grewal, Mercury Learning And Information		
	2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.		
	3. Let Us C-Yashavant P. Kanetkar		
15	Detailed Syllabus		
Sr. No.	Topic Name		No. of Lectures
1	Concepts of programming 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.		6
2	Programming with C 1. Structure of C program, Character set, key words, Constants and variables, Variable names, Data types and their declarations, Symbolic Constants.		12



	<p>2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ).</p> <p>3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator.</p> <p>4. Formatted input/output Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Use of Library functions: e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, Newton- Raphson method, Guass Elimination method.</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule.(Derivation of formula is not expected.)</p>	12
<b>Total No. of Lectures</b>		<b>30</b>

  
 Head  
 Department of Mathematics  
 K. J. Somaiya College, Kopargaon

  
 Principal  
 K. J. Somaiya College of Arts  
 Commerce & Science, Kopargaon

# Syllabus

Department of Mathematics

Certificate Course: "Principles of Programming Language"

(Computer based Practical)

Syllabus: 2020-21

## Objectives:

- 1) The course is designed to provide principles of programming in C language.
- 2) Students will be able to develop logics which will help them to create programs, applications in C.
- 3) To provide exposure to problem solving through programming.
- 4) Also by learning the basic programming constructs they can easily switch over to any other language in future.
- 5) To study and implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

Chapter No.	Topic Name	No. of Lectures
1	<b>Concepts of programming</b> 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.	6
2	<b>Programming with C</b> 1. Structure of C program, Character set, key words, Constants and variables, Variable names, Data types and their declarations, Symbolic Constants. 2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ). 3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator.	12

	<p>4. Formatted input/output Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Function Use of Library functions: e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, Newton-Raphson method, Gauss-Elimination Method.</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule (derivation of formula is not expected).</p>	12
<b>Total No. of Lectures</b>		<b>30</b>

**Following programs will be discussed in theory lectures:**

1. Sum of digits of an integer
2. To find factorial of a number
3. Checking and printing of prime numbers
4. Root of equation/s-Bisection method, Newton Raphson method, Gauss-Elimination Method
5. Numerical integration- Trapezoidal, Simpson's 1/3rd rule, Simpson's 3/8th rule.




**Reference Books:**

1. Numerical Methods in Engineering And Science- B. S. Grewal, Mercury Learning And Information
2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.
3. Let Us C-Yashavant P. Kanetkar



**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopargaon.**



**Principal**  
**K. J. Somaiya College of Arts**  
**Commerce & Science, Kopargaon**



**Proposal to BCD**  
**K. J. Somaiya College of Arts, Commerce & Science, Kopargaon.**  
**Department of Mathematics**

Date: 14/08/2020

To,  
The Chairman,  
Board of Curriculum Development,  
K. J. Somaiya College, Kopargaon.

**Subject: Regarding the permission for the certificate course in Principles of Programming Language.**

Respected Sir,

Considering the skilled based requirement of students of Mathematics department. We have designed 30 contact hrs Certificate course entitled "Principles of Programming Language". It is skilled based course to understand the basic concepts in programming.

The certificate course is useful to the UG level students from Mathematics department. This is the basic knowledge course about computer programming information. We are quite sure about the success of this certificate course and desirous to start this course at diploma level next year.

The required infrastructure is available in the department. The present faculty is ready to provide such knowledge and teach to the students about the programs and its uses in the field of Mathematics.

So, I request you to please give me the permission to conduct the 30 contact hrs certificate course in the subject of Mathematics.

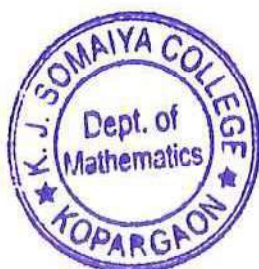
Thanking you

Your faithfully

Dr. B. D. Gavhane  
Head, Dept. of Mathematics

**Encl: Syllabus copy of Certificate Course**

Head  
Department of Mathematics  
K. J. Somaiya College, Kopargaon





Kopargaon Taluka Education Society's

## K.J. Somaiya College of Arts, Commerce & Science

Mohanirajnagar, Kopargaon - 423601, Dist. Ahmednagar (MH.)

Affiliated to Savitribai Phule Pune University, Pune ID No. PU/AN/ASC/07(1964)

☎ : 9146142000, 9146152000 Email ID : kjscollege@rediffmail.com, Website : kjscollege.com

NAAC ACCREDITED 'A' GRADE

AN ISO 9001-2015 CERTIFIED INSTITUTE

SAVITRIBAI PHULE PUNE UNIVERSITY "BEST COLLEGE AWARD"

Principal : Dr. B. S. Yadav (M.Sc., Ph.D.)

Founder President : Late K. B. Rohamare (Ex. M.L.A.)

Ref. No. :

Date : / / 202  
Date: 15 / 08 / 2020

### Board of Curriculum Development

To,  
Head of the Department,  
Department of Mathematics,  
K. J. Somaiya College, Kopargaon.

**Subject: Permission for the certificate course in Mathematics**

Respected sir,

As per your application dated 14/08/2020. The members of BCD conducted a meeting and after thorough discussion we have decided to accept your proposal of certificate course 'Principles of Programming Language' in Mathematics. The Committee has permitted to Department of Mathematics for 30 contact hrs. Certificate course 'Principles of Programming Language' under following conditions.

The Term and Condition are follows:

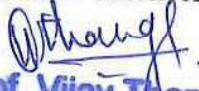
1. Syllabus to be completed in stipulated time.
2. Conduct Theory examination at the end of the course.
3. Minimum 15 admissions are permissible for conducting the course.


Members of the committee -

- |                        |                            |
|------------------------|----------------------------|
| 1. Dr. B. S. Yadav     | 2. Dr. S. R. Pagare        |
| 3. Prof. V. C. Thange  | 4. Prin. Dr. Goswami       |
| 5. Prin. Dr. Gurasal   | 6. Dr. B. B. Bhosale       |
| 7. Dr. S. B. Kale      | 8. Dr. G. K. Chavhan       |
| 9. Smt. N. B. Shinde   | 10. Prof. P. S. Bhadane    |
| 11. Shri. Sachin Ingle | 12. Shri Satyajeet Gondkar |

Copy to-

1. IQAC, KJS College.
2. Head, Dept. of Mathematics
3. Account Officer, KJS College

  
**Prof. Vijay Thange**  
Co-ordinator, IQAC  
K. J. Somaiya College, Kopargaon

  
**Dr. B. S. Yadav**  
Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopargaon





Kopargaon Taluka Education Society's  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE & SCIENCE,**  
Mohaniraj nagar, Kopargaon, Tal:- Kopargaon, Dist- Ahmednagar, Maharashtra, 423601.  
Website: [www.kjscollege.com](http://www.kjscollege.com), Email- [kjscollege@rediffmail.com](mailto:kjscollege@rediffmail.com)

### ADMISSION FORM FOR CERTIFICATE COURSES

Certificate course in the subject of \_\_\_\_\_

Name of the Certificate Course: - \_ : "Principles of Programming Language"

#### Personal Information

Name of the Student:-

\_\_\_\_\_

Class:- \_\_\_\_\_

Roll No. \_\_\_\_\_

Category - \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Mobile No. \_\_\_\_\_

E- mail ID- \_\_\_\_\_

Last Qualification:- \_\_\_\_\_

Percentage:- \_\_\_\_\_ %

Computer Knowledge:- Yes . / No.

Name of the Completed Computer Course:-

\_\_\_\_\_

Declaration:

I am declared that, as per my knowledge the above information is true and correct.

Student Signature

**DEPARTMENTAL USE ONLY**

Mr. /Miss./Mrs. \_\_\_\_\_

Class \_\_\_\_\_ is admitted in certificate course in the subject of \_\_\_\_\_

for the Period of \_\_\_\_\_ to \_\_\_\_\_, And his / her roll no is

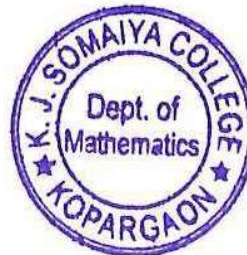
\_\_\_\_\_ for this course.

Date:-     /     / 20

  
Head,

Department of Mathematics  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon

Dept. Seal



  
Principal

Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopergaon

**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**

**CERTIFICATE Course: Principles of programming language**

**QUESTION PAPER (2020-21)**

**Time- 1Hrs (9.00 To 10.00AM)**

**Date-28th July 2021**

**Max. Marks – 50**

**Name of the student: \_\_\_\_\_ Roll No. \_\_\_\_\_**

**Class: \_\_\_\_\_**

**Jr. Supervisor Name and Signature: \_\_\_\_\_**

**Que.-Attempt any TWENTY FIVE of the following (50)**

- 1) The \_\_\_\_\_ provides pictorial representation of given problem.
  - a) Algorithm
  - b) Flowchart
  - c) Pseudocode
  - d) All of these
- 2) \_\_\_\_\_ is a procedure or step by step process for solving a problem.
  - a) Algorithm
  - b) Flowchart
  - c) Pseudocode
  - d) All of these
- 3) Why variable names beginning with the underscore do is not encouraged?
  - a) It is not standardized
  - b) To avoid conflicts since assemblers and loaders use such names
  - c) To avoid conflicts since library routines use such names
  - d) To avoid conflicts with environment variables of an operating system
- 4) All keywords in C are in \_\_\_\_\_.
  - a) Lower Case letters
  - b) UpperCase letters
  - c) CamelCase letters
  - d) None of the mentioned
- 5) What will be the maximum size of a double variable?
  - a) 1 bytes



- b) 4 bytes
  - c) 8 bytes
  - d) 16 bytes
- 6) A declaration float a,b; occupies \_\_\_\_ of memory
- a) 1 bytes
  - b) 4 bytes
  - c) 8 bytes
  - d) 16 bytes
- 7) Which of the following language is the predecessor to C Programming Language?
- a) Ab
  - b) B
  - c) BCPL
  - d) C++
- 8) What is a String in C Language?
- a) String is a new Data Type in C
  - b) String is an array of Characters with null character as the last element of array
  - c) String is an array of Characters with null character as the first element of array
  - d) String is an array of Integers with 0 as the last element of array
- 9) Which of the following is the variable type defined in header string.h?
- a) Siset
  - b) Size
  - c) size\_t
  - d) size-t
- 10) What is the maximum length of a C String?
- a) 32 characters
  - b) 64 characters
  - c) 256 characters
  - d) None of the above
- 11) How do you accept a Multi Word Input in C Language?
- a) SCANF

- b) GETS
  - c) GETC
  - d) FINDS
- 12) Choose a correct C Statement about Strings.
- a) PRINTF is capable of printing a multi word string
  - b) PUTS is capable of printing a multi word string
  - c) GETS is capable of accepting a multi word string from console or command prompt
  - d) All the above
- 13) An array elements are always stored in \_\_\_\_\_ memory locations.
- a) Random
  - b) Sequential
  - c) Sequential and Random
  - d) None of the above
- 14) What is the maximum number of dimensions an array in C may have?
- a) 2
  - b) 3
  - c) 12
  - d) No limit
- 15) What is a structure in C language?
- a) A structure is a collection of elements that can be of same datatype
  - b) A structure is a collection of elements that can be of different datatype
  - c) Elements of a structure are called members
  - d) All of the these
- 16) Choose a correct statement about C structure elements?
- a) Structure elements are stored on random free memory locations
  - b) structure elements are stored in register memory locations
  - c) structure elements are stored in contiguous memory locations
  - d) None of the above
- 17) A C structure or User defined datatype is also called \_\_\_\_\_.
- a) Derived data type
  - b) Secondary data type

- c) Aggregate data type
- d) All the above

18) Which of the following return-type cannot be used for a function in C?

- a) char \*
- b) struct
- c) void
- d) none of the mentioned

19) . Which loop is faster in C Language, for, while or Do While?

- a) For
- b) While
- c) do while
- d) All work at the same speed

20) The conditional operator are also known as

- a) Relational operator
- b) Binary operator
- c) ternary operator
- d) Arithmetic operator

21) If you have to make decision based on multiple choices, which of the following is best suited?

- a) If
- b) if-else
- c) if-else-if
- d) all of the above

22) The continue statment cannot be used with \_\_\_\_\_

- a) For
- b) While
- c) do while
- d) switch

23) A pointer is a.....

- a) variable that stores address of an instruction
- b) variable that stores address of other variable
- c) keyword used to create variables



- d) None of these
- 24) The address operator &, cannot act on.....
- a) R-values
  - b) Arithmetic expressions
  - c) Both of the above
  - d) Local variables
- 25) Using Bisection method find the root of  $\cos(x) - x * e^x = 0$  with  $a = 0$  and  $b = 1$ .
- a) 0.617
  - b) 0.517
  - c) 0.417
  - d) 0.550
- 26) A function is given by  $x - e^{-x} = 0$ . Find the root between  $a = 0$  and  $b = 1$  by using Bisection method.
- a) 0.655
  - b) 0.565
  - c) 0.665
  - d) 0.656
- 27) Use Bisection Method to find out the root of  $x - \sin x - 0.5 = 0$  between 1 and 2.
- a) 1.497
  - b) 1.947
  - c) 1.479
  - d) 1.974
- 28) What is the smallest unit of information.
- a) A bit
  - b) A byte
  - c) A block
  - d) A nibble



Department of Mathematics  
K. J. Somaiya College, Kopergaon

**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**  
**Certificate Course in Mathematics**  
**"Principles of Programming Language"**  
**Admitted Students for the Certificate Course Year- (2020-2021)**

<b>Sr. No.</b>	<b>Name of the Students</b>
1	Sadafal Kiran Sharad
2	Shrutika Devidas Rathi
3	Rathi Shweta Devidas
4	Vaishali shivaji kharat
5	Shaikh Mubashshira Azimuddin
6	Barwant Poonam Balasaheb
7	Gadhawe Sulochana Machhindra
8	Joshi Vaishnavi Nitin
9	Shinde swati Bhagwat
10	Jawale Rutuja Rajaram
11	Dahe akshada bapusaheb
12	Jawale Sakshi Pandit
13	Mhaske prasad babasaheb
14	Nikam sayali vaijinath
15	Sachin Rajendra Gawal
16	Yogita Popatrao Gujar
17	Ugale Yogita Rajendra
18	Kalwaghe kalyani annsaheb
19	Adik Vaishnavi kailas
20	Shaikh mayesara yakub
21	Gavhale Shrutika Pandit
22	Bornare Sakshi Sanjay
23	Bharud sonali raman
24	Hon Payal Dilip
25	Autade Rutik Bhausahab

26	Sakshi Gosavi
27	Nikam Ashwini Rajaram
28	Nikam Janavi Dilip
29	Shaikh Aayeshabi Hasham
30	Ranshur Shraddha Ashok
31	Pangavhane vaishnavi sanjay
32	Pachore Dnyaneshwari Annasaheb
33	Inamke Lina Kishor
34	Borawake shweta dilip
35	Gawali Ashirwad Somnath
36	Kalokhe Archana Uttam
37	Abhale Sampada Sunil
38	Kale vaishnavi rajendra
39	Jadhav Manisha Gorakh
40	Vaishnavi Gorakh Pagar
41	Sadafal Snehal Santosh

Dr. B. D. Gavhane  
Head, Dept. of Mathematics

Department of Mathematics  
K. J. Somaiya College of Arts, Commerce & Science, Kopergaon



Dr. B. S. Yadav  
Principal

Principal  
K.J. Somaiya College of Arts  
Commerce & Science, Kopergaon



Kopargaoon Taluka Education Society's  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,**  
**KOPARGAON**

Mohaniraj nagar, Kopargaoon.423601

**Certificate Course in Mathematics**  
**"Principles of Programming Language"**  
(Computer based Practical)

**TIME TABLE- 2020-2021**

**With Effect From: 18/08/2020(online)**  
**27/01/21 (offline)**

Time	Wednesday	Thursday	Friday	Saturday
12.30 To 1.30 PM.	Lect. in classroom  (S-46)	Lect. in Classroom  (S-46)	Lect. in Classroom  (S-46)	Computer lab work / practical (S-50)

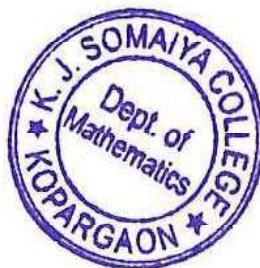
**For online Lectures:**

**See YouTube Channel Dr.B.D.Gavhane** (Links of online lectures will be shared with you)

**Name of the Teacher:-**

1. Dr. B. D. Gavhane (Mathematics)
2. Prof. G. M. Kunjir (Computer Science)

  
Department of Mathematics  
K. J. Somaiya College, Kopargaoon



  
Principal  
K.J.Somaiya College  
Kopargaoon

2

2

**“Principles of Programming Language”** (Computer based Practical

## STUDENT ATTENDANCE SHEET

[illegible]



[illegible]



18	Kalwaghe Kalyani annsaheb	<del>Ashwini</del>	<del>A</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
19	Adik Vaishnavi kailas	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
20.	Shaikh mayesara yakub	<del>A</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>A</del>	<del>Sakshi</del>	<del>A</del>	<del>Adikv</del>	<del>Adikv</del>
21.	Gavhale Shrutika Pandit	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
22.	Bornare Sakshi Sanjay	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
23	Bharud sonali raman	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
24	Hon Payal Dilip	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
25	Autade Rutik Bhausahab	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
26	Sakshi Gosavi	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>
27	Nikam Ashwini Rajaram	<del>Ashwini</del>	<del>Sakshi</del>	<del>Autadel</del>	<del>Hon</del>	<del>sonali</del>	<del>Sakshi</del>	<del>G.S.P</del>	<del>Adikv</del>	<del>Adikv</del>



28	Nikam Janavi Dilip	Jani
29	Shaikh Aayeshabi Hasham	Shaikha
30	Ranshur Shraddha Ashok	Shradhu
31	Pangavhane vaishnavi sanjay	Pangal
32	Pachore Dnyaneshwari Annasaheb	P.D.A
33	Inamke Lina Kishor	Linal
34	Borawake shweta Dilip	Bshwete
35	Gawali Ashirwad Somnath	gawalit
36	Kalokhe Archana Uttam	Akolabhe
37	Abhale Sampada Sunil	Sampadal







DEPARTMENT OF MATHEMATICS

NOTICE

EXAMINATION IN CERTIFICATE COURSE IN MATHEMATICS

**Principles of Programming language**

21/07/2021

All the students from Certificate Course in Mathematics (Principles of Programming Language) inform you that the examination scheduled on dated **28/07/2021** time **9.00 to 10.00 am.** online using Google Forms.

Link of online examination will be shared with you before ten minutes of commencement of examination.



Dr. B. D. Gavhane

Department of Mathematics

Head

Department of Mathematics  
K. J. Somaiya College, Kopergaon

**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**  
**Certificate Course in Mathematics**  
**"Principles of Programming Language"**  
**Result sheet of Certificate Course in Mathematics for the year- (2020-2021)**

Sr. No.	Name of the Students	Marks Obtained		Total	Grade
		Theory (50)	Practical (50)		
1	Sadafal Kiran Sharad	20	28	48	D
2	Shrutika Devidas Rathi	44	35	79	A
3	Rathi Shweta Devidas	26	27	53	C
4	Vaishali shivaji kharat	36	34	70	A
5	Shaikh Mubashshira Azimuddin	32	40	72	A
6	Barwant Poonam Balasaheb	46	42	88	A
7	Gadhawe Sulochana Machhindra	50	44	94	A
8	Joshi Vaishnavi Nitin	50	46	96	A
9	Shinde swati Bhagwat	46	45	91	A
10	Jawale Rutuja Rajaram	40	42	82	A
11	Dahe akshada bapusaheb	50	46	96	A
12	Jawale Sakshi Pandit	50	43	93	A
13	Mhaske prasad babasaheb	34	36	70	A
14	Nikam sayali vaijinath	34	35	69	B
15	Sachin Rajendra Gawal	50	40	90	A
16	Yogita Popatrao Gujar	46	45	91	A
17	Ugale Yogita Rajendra	48	44	92	A
18	Kalwaghe kalyani annsaheb	48	35	83	A
19	Adik Vaishnavi kailas	50	43	93	A
20	Shaikh mayesara yakub	38	35	73	A
21	Gavhale Shrutika Pandit	50	44	94	A
22	Bornare Sakshi Sanjay	44	42	86	A
23	Bharud sonali raman	50	43	93	A
24	Hon Payal Dilip	44	45	89	A


25	Autade Rutik Bhausaheb	40	42	82	A
26	Sakshi Gosavi	36	34	70	A
27	Nikam Ashwini Rajaram	48	43	91	A
28	Nikam Janavi Dilip	30	34	64	B
29	Shaikh Aayeshabi Hasham	26	23	49	D
30	Ranshur Shraddha Ashok	28	29	57	C
31	Pangavhane vaishnavi sanjay	50	43	93	A
32	Pachore Dnyaneshwari Annasaheb	48	42	90	A
33	Inamke Lina Kishor	44	43	87	A
34	Borawake shweta dilip	42	42	84	A
35	Gawali Ashirwad Somnath	50	48	98	A
36	Kalokhe Archana Uttam	48	35	83	A
37	Abhale Sampada Sunil	38	42	80	A
38	Kale vaishnavi rajendra	46	32	78	A
39	Jadhav Manisha Gorakh	30	34	64	B
40	Vaishnavi Gorakh Pagar	50	42	92	A
41	Sadafal Snehal Santosh	30	34	64	B

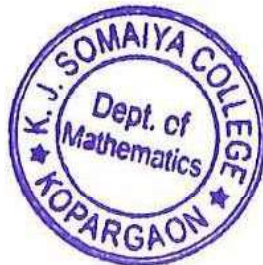
1. Name and Signature of the Subject Teacher

  
Dr. B. D. Gavhane


2. Name and Signature of the Subject Teacher

  
Prof. Kunjir G.M.

  
Dr. B. D. Gavhane  
Head, Dept. of Mathematics




Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon

  
Dr. B. S. Yadav  
Principal  
K.J.Somaiya College  
Kopergaon




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3	Rathi Shweta Devidas	26	B
4	Vaishali shivaji kharat	36	B
5	Shaikh Mubashshira Azimuddin	32	B
6	Barwant Poonam Balasaheb	46	A
7	Gadhawe Sulochana Machhindra	50	A
8	Joshi Vaishnavi Nitin	50	A
9	Shinde swati Bhagwat	46	A
10	Jawale Rutuja Rajaram	40	A
11	Dahe akshada bapusaheb	50	A
12	Jawale Sakshi Pandit	50	A
13	Mhaske prasad babasaheb	34	B
14	Nikam sayali vaijinath	34	B
15	Sachin Rajendra Gawal	50	A
16	Yogita Popatrao Gujar	46	A
17	Ugale Yogita Rajendra	48	A
18	Kalwaghe kalyani annsaheb	48	A
19	Adik Vaishnavi kailas	50	A
20	Shaikh mayesara yakub	38	A
21	Gavhale Shrutika Pandit	50	A
22	Bornare Sakshi Sanjay	44	A
23	Bharud sonali raman	50	A
24	Hon Payal Dilip	44	A
25	Autade Rutik Bhausahab	40	A

  
**Head**  
 Department of Mathematics  
 K. J. Somaiya College, Kopargaoon



  
**Principal**  
 K. J. Somaiya College  
 Kopargaoon

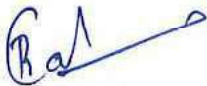
26	Sakshi Gosavi	36	A
27	Nikam Ashwini Rajaram	48	A
28	Nikam Janavi Dilip	30	B
29	Shaikh Aayeshabi Hasham	26	C
30	Ranshur Shraddha Ashok	28	C
31	Pangavhane vaishnavi sanjay	50	A
32	Pachore Dnyaneshwari Annasaheb	48	A
33	Inamke Lina Kishor	44	A
34	Borawake shweta dilip	42	A
35	Gawali Ashirwad Somnath	50	A
36	Kalokhe Archana Uttam	48	A
37	Abhale Sampada Sunil	38	A
38	Kale vaishnavi rajendra	46	A
39	Jadhav Manisha Gorakh	30	B
40	Vaishnavi Gorakh Pagar	50	A
41	Sadafal Snehal Santosh	30	B

1. Name and Signature of the Subject Teacher

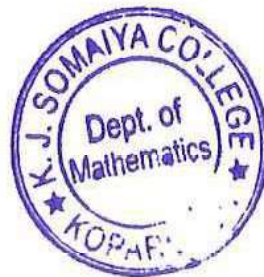
  
Dr. B. D. Gavhane


2. Name and Signature of the Subject Teacher

  
Prof. Kunjir G.M.

  
Dr. B. D. Gavhane  
Head, Dept. of Mathematics

Department of Mathematics  
K. J. Somaiya College, Kopergaon



  
Dr. B. S. Yadav  
Principal  
Principal

K. J. Somaiya College of Arts  
Kopergaon



**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**

**Department of Mathematics  
Academic year 2020-21**

**Report**

<b>Name of the certificate course</b>	Principles of programming language
<b>Date and Duration</b>	18/08/2020 to 10/02/2021 30 Hours
<b>Name of faculty</b>	Dr.B.D. Gavhane Mr. G.M. Kunjir
<b>Number of participants enrolled</b>	41
<b>Venue</b>	Department of Mathematics

**Brief summary of activity/Event:**

Department of Mathematics runs a certificate course "Principles of programming language". The objective of the course is to develop logics that will help students to create programs. It also aims to provide exposure to problem-solving through programming. Head of the department Dr. B.D. Gavhane inaugurated this course.

The course content is made available to students. The students learn about programming language and solve mathematical problems using programs. Students studied the implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

**The outcome of activity/Event:**

1. Developed logic that helped students to create programs.
2. Students learned the basic programming constructs they can easily switch over to any other language in the future.

  
**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopargaon**

  
**Principal**  
**K. J. Somaiya College of Arts**  
**Commerce & Science, Kopargaon**





Kopargaon Taluka Education Society's  
**K.J.Somaiya College of Arts, Commerce & Science**

Mohanirajnagar, Kopargaon, Dist: Ahmednagar 423601

**Certificate Course**

On

**“Principles of Programming Language”**

Organized By

**Department of Mathematics**

**Certificate**



This is to certify that, \_\_\_\_\_  
has successfully completed the certificate course on ‘Principles of Programming  
Language’ in the academic year —/—.

**Dr. B.D. Gavhane**  
HOD (Mathematics)

**Dr. B.B. Bhosale**  
Science faculty I/C

**Dr. B.S. Yadav**  
Principal

**Head,**  
Department of Mathematics  
K. J. Somaiya College, Kopargaon

**Principal**  
K. J. Somaiya College of Arts,  
Commerce & Science, Kopargaon



Kopargaon Taluka Education Society's

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,  
KOPARGAON

Mohaniraj nagar, Kopargaon.423601

**Organized by**  
**DEPARTMENT OF MATHEMATICS**

CERTIFICATE COURSE  
IN MATHEMATICS

**“Principles of Programming Language”**

Course Code- CC.004

Year of Commencement: 2019-20





Kopargaon Taluka Education Society's

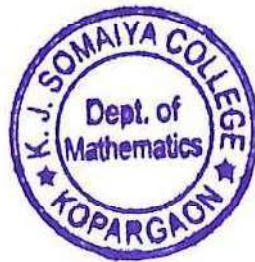
K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,  
KOPARGAON

Mohaniraj nagar, Kopargaon.423601

**Organized by  
DEPARTMENT OF MATHEMATICS**

CERTIFICATE COURSE  
IN MATHEMATICS

**“Principles of Programming Language”**



**Year of Commencement: 2019-20**



## Certificate Course in MATHEMATICS

-: Name of the Certificate Course:-

### **"Principles of Programming Language"**


(Computer based Practical)

Designed By: -	Department of MATHEMATICS
Nature of Course: -	Theory + Practical (Computer based)
Duration: -	Two Months
Eligibility:-	12 <sup>th</sup> Pass
Course Fee: -	100/- Rs. per Student
Capacity: -	Min. 20 Students per batch
Total Lectures: -	30 lectures

Evaluation Process:- Grade System (Marks Converted into Grade)

➤ Theory exam.-	50 Marks	Grade System:-
➤ Practical & Exercises.-	50 Marks	1. 'A' Grade – More than 70 Marks
Total Marks: -	100 Marks	2. 'B' Grade – 60 to 70 Marks
		3. 'C' Grade – 50 to 60 Marks
		4. 'D' Grade – 40 to 50 Marks

Passing: - Obtained 40% Marks

  
Coordinator: - Dr. B. D. Gavhane  
Head, Dept. of Mathematics



  
Principal  
K.J. Somaiya College  
Kopargaoon

**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**

**Department of Mathematics  
2019-20**

1	Name of Department	Mathematics	
2	Title of Course	Principles of programming language	
3	Course Level	Certificate	
4	Implementation academic year	Since 2019-20	
5	Preamble of Syllabus	1. Concepts of programming 2. Programming with C 3. Computational numerical methods	
6	Faculty of the Course	Science	
7	Eligibility of Admission and prerequisite	12 <sup>th</sup> Science Pass	
8	Duration of the Course	30 days	
9	Intake capacity of students	60	
10	Total hours of teaching	30	
11	Pattern of examination, if any		
	Theory exam, Practical and exercises	Theory and practical exam at the end of the course.	
12	Teaching Faculty		
	Name of Faculty	Designation	Qualification
	Mr. S.R. Ukirde	Assistant Professor	M.Sc., Mathematics
	Mr. G.M. Kunjir	Assistant Professor	M.Sc. Computer Science
13	Other Facilities	Computer Laboratory, Library	
14	Recommended books		
	1. Numerical Methods In Engineering And Science- B.S. Grewal, Mercury Learning And Information		
	2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.		
	3. Computer oriented Numerical Methods – V. Rajaram.		
	4. Let Us C-Yashavant P. Kanetkar		
15	Detailed Syllabus		
Sr. No.	Topic Name		No. of Lectures
1	Concepts of programming 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.		6
2	Programming with C 1. Structure of C program, Character set, key words.		12

	<p>Constants and variables, Variable names, Data types and their declarations, Symbolic Constants.</p> <p>2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ).</p> <p>3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator.</p> <p>4. Formatted input/output</p> <p>Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Function:</p> <p>Use of Library functions e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, Newton- Raphson method, System of equations</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule.</p>	12
<b>Total No. of Lectures</b>		<b>30</b>

  
 Head  
 Department of Mathematics  
 K. J. Somaiya College, Kopergaon

  
 Principal  
 K. J. Somaiya College of Arts  
 Commerce & Science, Kopergaon



# Syllabus

Department of Mathematics

Certificate Course: **"Principles of Programming Language"**

(Computer based Practical)

Syllabus: 2019-20

## Objectives:

- 1) The course is designed to provide principles of programming in C language.
- 2) Students will be able to develop logics which will help them to create programs, applications in C.
- 3) To provide exposure to problem solving through programming.
- 4) Also by learning the basic programming constructs they can easily switch over to any other language in future.
- 5) To study and implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

Chapter No.	Topic Name	No. of Lectures
1	<b>Concepts of programming</b> 1. Definition and Properties of algorithms, Algorithm development. 2. Flow charts- symbols and simple flowcharts. 3. Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number. 4. Types of programming language: Lower, middle and higher level languages.	6
2	<b>Programming with C</b> 1. Structure of C program, Character set, key words, Constants and variables, Variable names, Data types and their declarations, Symbolic Constants. 2. Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ). 3. Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator.	12

	<p>4. Formatted input/output Control statements: If, if else, while, do while for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, go to statement.</p> <p>5. Function Use of Library functions: e.g. mathematical, trigonometric, graphics.</p> <p>6. Arrays: 1-D, 2-D and String</p> <p>7. Concept of Pointers</p>	
3	<p><b>Computational Numerical Methods</b></p> <p>1. Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use in Computer, Truncation error, round off errors (Explain with the help of examples)</p> <p>2. Iterative methods: Discussion of algorithm and flowcharts and writing C programs for finding single root of equation using Bisection method, Newton-Raphson method. System of Equations.</p> <p>3. Discussion of algorithm and flowcharts and writing C program for Trapezoidal rule and Simpson's 1/3rd rule, Simpson's 3/8th rule (derivation of formula is not expected).</p>	12
<b>Total No. of Lectures</b>		<b>30</b>

**Following programs will be discussed in theory lectures:**

1. Sum of digits of an integer
2. To find factorial of a number
3. Checking and printing of prime numbers
4. Root of equation/s-Bisection method, Newton Raphson method, Gauss-Elimination Method
5. Numerical integration- Trapezoidal, Simpson's 1/3rd rule, Simpson's 3/8th rule.

**Reference Books:**

1. Numerical Methods In Engineering And Science- B. S. Grewal, Mercury

Learning And Information

2. Introductory methods of Numerical Analysis-S.S. Sastry, PHI Learning Private Limited, New Delhi.
3. Computer oriented Numerical Methods – V. Rajaraman.
4. Let Us C-Yashavant P. Kanetkar.



**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopargaon**



**Principal**  
**K. J. Somaiya College of Arts**  
**Commerce & Science, Kopargaon**





**Proposal to BCD**  
**K. J. Somaiya College of Arts, Commerce & Science, Kopargaon.**  
**Department of Mathematics**

Date: 03 / 07 / 2019

To,  
The Chairman,  
Board of Curriculum Development,  
K. J. Somaiya College, Kopargaon.

**Subject: Regarding the permission for the certificate course in Principles of Programming Language.**

Respected Sir,

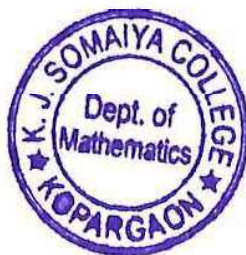
Considering the skilled based requirement of students of Mathematics department. We have designed 30 contact hrs Certificate course entitled "Principles of Programming Language". It is skilled based course to understand the basic concepts in programming.

The certificate course is useful to the UG level students from Mathematics department. This is the basic knowledge course about computer programming information. We are quite sure about the success of this certificate course and desirous to start this course at diploma level next year.

The required infrastructure is available in the department. The present faculty is ready to provide such knowledge and teach to the students about the programs and its uses in the field of Mathematics.

So, I request you to please give me the permission to conduct the 30 contact hrs certificate course in the subject of Mathematics.

Thanking you



Your faithfully

Dr. B. D. Gavhane  
Head, Dept. of Mathematics  
**Department of Mathematics**  
**K. J. Somaiya College, Kopargaon**

Encl: Syllabus copy of Certificate Course

*Atthangl*  
*Recommended the said course*  
*03/07/2019*





Kopargaon Taluka Education Society's

## K.J. Somaiya College of Arts, Commerce & Science

Mohanirajnagar, Kopargaon - 423601, Dist. Ahmednagar (MH.)

Affiliated to Savitribai Phule Pune University, Pune ID No. PU/AN/ASC/07(1964)

☎ : 9146142000, 9146152000 Email ID : kjscollege@rediffmail.com, Website : kjscollege.com

NAAC ACCREDITED 'A' GRADE

AN ISO 9001-2015 CERTIFIED INSTITUTE

SAVITRIBAI PHULE PUNE UNIVERSITY "BEST COLLEGE AWARD"

Principal : Dr. B. S. Yadav (M.Sc., Ph.D.)

Founder President : Late K. B. Rohamare (Ex. M.L.A.)

Ref. No. :

Date: 06/07/2019 /202

### Board of Curriculum Development

To,  
Head of the Department,  
Department of Mathematics,  
K. J. Somaiya College, Kopargaon.

**Subject: Permission for the certificate course in Mathematics**

Respected sir,

As per your application dated 03/07/2019. The members of BCD conducted a meeting and after thorough discussion we have decided to accept your proposal of certificate course 'Principles of Programming Language' in Mathematics. The Committee has permitted to Department of Mathematics for 30 contact hrs. certificate course 'Principles of Programming Language' under following conditions.

The Term and Condition are follows:

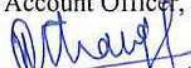
1. Syllabus to be completed in stipulated time.
2. The Admission fee applicable for per students is Rs.100 only.
3. Conduct Theory examination at the end of the course.
4. Minimum 15 admissions are permissible for conducting the course.


Members of the committee -

- |                        |                            |
|------------------------|----------------------------|
| 1. Dr. B. S. Yadav     | 2. Dr. S. R. Pagare        |
| 3. Prof. V. C. Thange  | 4. Prin. Dr. Goswami       |
| 5. Prin. Dr. Gurasal   | 6. Dr. B. B. Bhosale       |
| 7. Dr. S. B. Kale      | 8. Dr. G. K. Chavhan       |
| 9. Smt. N. B. Shinde   | 10. Prof. P. S. Bhadane    |
| 11. Shri. Sachin Ingle | 12. Shri Satyajeet Gondkar |

Copy to-

1. IQAC, KJS College.
2. Head, Dept. of Mathematics
3. Account Officer, KJS College

  
**Prof. Vijay Thange**  
Co-ordinator, IQAC  
K. J. Somaiya College, Kopargaon

  
Dr. B. S. Yadav  
Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopargaon





Kopargaon Taluka Education Society's  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE & SCIENCE,**  
 Mohaniraj nagar, Kopargaon, Tal:- Kopargaon, Dist- Ahmednagar, Maharashtra, 423601.  
 Website: [www.kjscollege.com](http://www.kjscollege.com), Email- [kjscollege@rediffmail.com](mailto:kjscollege@rediffmail.com)

### ADMISSION FORM FOR CERTIFICATE COURSES

Certificate course in the subject of \_\_\_\_\_

Name of the Certificate Course: - \_: "Principles of Programming Language"

#### Personal Information

Name of the Student:-

\_\_\_\_\_

Class:- \_\_\_\_\_

Roll No. \_\_\_\_\_

Category - \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Mobile No. \_\_\_\_\_

E- mail ID- \_\_\_\_\_

Last Qualification:- \_\_\_\_\_

Percentage:- \_\_\_\_\_ %

Computer Knowledge:- Yes . / No.

Name of the Completed Computer Course:-

\_\_\_\_\_



K. J. Somaiya College of Arts, Commerce & Science  
 Kopargaon, Tal:- Kopargaon, Dist- Ahmednagar, Maharashtra, 423601.





Declaration:

I am declared that, as per my knowledge the above information is true and correct.

Student Signature

DEPARTMENTAL USE ONLY

Mr. /Miss./Mrs. \_\_\_\_\_

Class \_\_\_\_\_ is admitted in certificate course in the subject of \_\_\_\_\_

for the Period of \_\_\_\_\_ to \_\_\_\_\_, And his / her roll no is

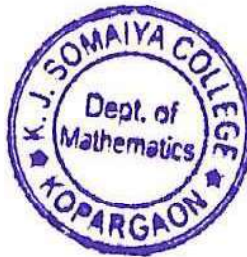
\_\_\_\_\_ for this course.

Date:-     /     / 20

  
Head,

Department of Mathematics  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon

Dept. Seal



Principal

  
Principal  
K. J. Somaiya College  
Kopergaon



Certificate Course in Mathematics

K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON  
Certificate Course in Mathematics

**: "Principles of Programming Language"**

**QUESTION PAPER**

Date :- / /

Time: 10 am to 12 pm

Marks : 50

Name of the student: \_\_\_\_\_ Roll No.

Class: \_\_\_\_\_

Jr. Supervisor Name and Signature: \_\_\_\_\_

Note : 1. All questions are compulsory.

2. The right side numerical value is indicating the marks for the question.

Q. 1. How many keywords and operators are used in C language? 03

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Q.2. What is Algorithm and explain the advantages of algorithm approach while solving problems? 04

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Q.3. What is the return type of scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ).function, and what it returns? 05

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Q.4. Draw flow chart and write C-Program to integrate  $\int_0^1 \frac{1}{\sqrt{1-x^2}} dx$  using Trapezoidal rule in ten iterations.

05

Q.5. Write C-program to print prime numbers between 1 to 100.

02

Q-6 What is Array programming?

03

Q-7 Write a programme for Newton-Raphson method to find out first two approximations for root  $x^3 + 3x^2 - 5 = 0$ .

05





Q-8. Write a programme for Simpson's  $1/3^{\text{rd}}$  method to find out first four approximations for root  $\sin x + e^x = 0$ .

03

Q-9. Draw a flow chart for Bisection method to find root of equation.

05

Q-10. What will be the output of the C program?

03

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
    char *ptr;
```

```
    char string[] = "learn C from 2braces.com";
```

```
    ptr = string;
```

```
    ptr += 6;
```

```
    printf("%s",ptr);
```

```
    return 0;
```

```
}
```



Q-11 Write a program in C to display the first 10 natural numbers

05

Q-12 Write a program in C to make such a pattern like right angle triangle with a number which will repeat a number in a row.

02

Q-13 Write a program in C to find LCM of any two numbers.

03

Q-14 Explain the binary operator?

02

\*\*\*\*\*



Certificate Course in Mathematics


K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON

Certificate Course in Mathematics

## "Principles of Programming Language"

List of admitted students for the certificate course in Mathematics (2019-2020)

Roll. No.	Name of the Students	Completed Qualification	Admitted Class
1.	Bhakare Tushar Ashok	S.Y.B.Sc	T.Y.B.Sc
2.	Bornarc Surekha Prakash	S.Y.B.Sc	T.Y.B.Sc
3.	Gavhane Chaitali Suryabhan	S.Y.B.Sc	T.Y.B.Sc
4.	Gaikwad Tejas Madhukar	S.Y.B.Sc	T.Y.B.Sc
5.	Ghughe Pallavi Madan	S.Y.B.Sc	T.Y.B.Sc
6.	Laware Pratiksha Shivaji	S.Y.B.Sc	T.Y.B.Sc
7.	Mandole Ashwini Sanjay	S.Y.B.Sc	T.Y.B.Sc
8.	Nikam Anita Kailas	S.Y.B.Sc	T.Y.B.Sc
9.	Pandey Anuradha Jayprakash	S.Y.B.Sc	T.Y.B.Sc
10.	Rashinkar Rajshri Ashok	S.Y.B.Sc	T.Y.B.Sc
11.	Shinde Rutuja Changdev	S.Y.B.Sc	T.Y.B.Sc
12.	Sonawane Pooja Ganpat	S.Y.B.Sc	T.Y.B.Sc
13.	Sonawane Shivam Rajendra	S.Y.B.Sc	T.Y.B.Sc
14.	Ugale Neha Devidas	S.Y.B.Sc	T.Y.B.Sc
15.	Chaudhari Vivek R.	S.Y.B.Sc	T.Y.B.Sc
16.	Kumavat Prafull T.	S.Y.B.Sc	T.Y.B.Sc
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27.			

  
**Dr. B.D. Gavhane**  
 Head, Dept. of Mathematics  
 Department of Mathematics  
 K. J. Somaiya College, Kopergaon



  
**Dr. B. S. Yadav**  
 Principal  
 K.J. Somaiya College  
 Kopergaon





Kopargaon Taluka Education Society's  
K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,  
KOPARGAON  
Mohaniraj nagar, Kopargaon.423601

## Certificate Course in Mathematics

### "Principles of Programming Language"

(Computer based Practical)

TIME TABLE- 2019-2020

Course Duration:- Two Months

Time	Wednesday	Thursday	Friday	Saturday
12.30 To 1.30 PM.	Lect. in classroom (S-40)	Lect. in Classroom (S-40)	Lect. in Classroom (S-40)	Computer lab work / Practical (S-50)

#### Name of the Teacher:-

1. Prof. S. R. Ukirde (Mathematics)
2. Prof. G. M. Kunjir (Computer Science)

(Dr. B.D. Gavhane)  
Head, Dept. of Mathematics



(Dr. B. S. Yadav)  
Principal

K. J. Somaiya College  
Kopargaon



K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON

## Certificate Course in Mathematics(2019-20)

**“Principles of Programming Language” (Computer based Practical)**

## STUDENT ATTENDANCE SHEET

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DEPARTMENT OF MATHEMATICS

NOTICE

EXAMINATION IN CERTIFICATE COURSE IN MATHEMATICS

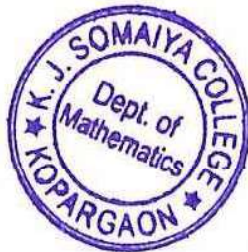
**Principles of Programming language**


02/02/2020

All the students from Certificate Course in Mathematics (Principles of Programming Language) inform you that the theory examination scheduled on dated **04/02/2020** time **12.00 pm to 2.00 pm**.

Students present before 15 min. in examination hall with college identity cards.

Exam Hall – (S-46)



  
Dr. B. D. Gavhane

Department of Mathematics  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon



**Kopergaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE, KOPARGAON**  
 Mohaniraj nagar, Kopergaon. 423601

### Certificate Course in Mathematics

**“Principles of Programming Language”**

(Computer based Practical)

**Result sheet**

**Certificate Course in Mathematics (2019-2020)**

Sr. No.	Name of the Students	Class	Obtained Marks		Total (100)	Grade
			Theory (50)	Practical (50)		
1.	Bhakare Tushar Ashok	T.Y.B.Sc	37	38	75	A
2.	Bornare Surekha Prakash	T.Y.B.Sc	32	40	72	A
3.	Gavhane Chaitali Suryabhan	T.Y.B.Sc	35	42	77	A
4.	Gaikwad Tejas Madhukar	T.Y.B.Sc	30	38	68	B
5.	Ghugge Pallavi Madan	T.Y.B.Sc	35	38	73	A
6.	Laware Pratiksha Shivaji	T.Y.B.Sc	38	42	80	A
7.	Mandole Ashwini Sanjay	T.Y.B.Sc	37	42	79	A
8.	Nikam Anita Kailas	T.Y.B.Sc	40	45	85	A
9.	Pandey Anuradha Jayprakash	T.Y.B.Sc	42	46	88	A
10.	Rashinkar Rajshri Ashok	T.Y.B.Sc	38	35	78	A
11.	Shinde Rutuja Changdev	T.Y.B.Sc	32	41	73	A
12.	Sonawane Pooja Ganpat	T.Y.B.Sc	38	37	75	A
13.	Sonawane Shivam Rajendra	T.Y.B.Sc	38	41	79	A
14.	Ugale Neha Devidas	T.Y.B.Sc	30	36	66	B
15.	Chaudhari Vivek R.	T.Y.B.Sc	31	33	64	B
16.	Kumavat Prafull T.	T.Y.B.Sc	39	42	81	A
17.						
18.						
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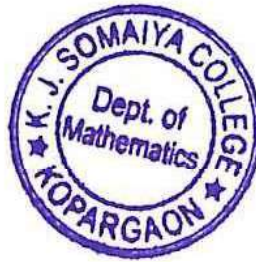
1. Name and Signature of the Subject Teacher


  
Prof. Ukirde S.R.

2. Name and Signature of the Subject Teacher

  
Prof. Kunjir G.M.

  
Dr. B. D. Gavhane  
Head, Dept. of Mathematics  
Head  
Department of Mathematics  
K. J. Somaiya College, Kopergaon



  
Dr. B. S. Yadav  
Principal  
Principal  
K. J. Somaiya College  
Kopergaon





**Kopargaon Taluka Education Society's**  
**K. J. SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE,**  
**KOPARGAON** Mohanirajnagar, Kopargaon. 423601

**Certificate Course in Mathematics**  
**"Principles of Programming Language"**

(Computer based Practical)

**Admitted Students for the Certificate Course Year- (2019-2020)**

**Paid Fee Details**

Sr. No.	Name of the Students	Receipt No.	Paid Fee	Receipt issue-Sign. of Students
1.	Bhakare Tushar Ashok		100	
2.	Bornare Surekha Prakash		100	
3.	Gavhane Chaitali Suryabhan		100	
4.	Gaikwad Tejas Madhukar		100	
5.	Ghuge Pallavi Madan		100	
6.	Laware Pratiksha Shivaji		100	
7.	Mandole Ashwini Sanjay		100	
8.	Nikam Anita Kailas		100	
9.	Pandey Anuradha Jayprakash		100	
10.	Rashinkar Rajshri Ashok		100	
11.	Shinde Rutuja Changdev		100	
12.	Sonawane Pooja Ganpat		100	
13. 5	Sonawane Shivam Rajendra		100	
14.	Ugale Neha Devidas		100	
15.	Chaudhari Vivek R.		100	
16.	Kumavat Prafull T.		100	
17.				
18.				
19.				
20.				
21.				



22.				
23.				
24.				
25.				
Total			1600	
1. Fee Submitted to Office Receipt No. 676, Date – 18/02/2020, Amount:- 1600/-Amount in Word: One Thousand Six hundred only. Total Course fee paid to office - Rs. 1600/-				

Dr. B. D. Gavhane  
Head, Dept. of Mathematics



Dr. B. S. Yadav  
Principal

**KOPARGAON TALUKA EDUCATION SOCIETY'S**  
**K. J. SOMAIYA (PG) COLLEGE**  
 Kopargaon, Dist: Ahmednagar

Misc. Fee Receipt

Section: P.G.

Receipt No.:	676	Date:	18/02/2020	Class:	NON-GRANT
Registration No.:	0	Bank Receipt No.:		Division Type:	
Name:	MATHEMATICS DEPARTMENT			Roll No.:	
				Division:	

Fee Details

Bus Fee	0	T.C. Fee	0	Cost of Book	0	CollegeDev.Fund	0
Library Fine	0	NCC Admission	0	Application Fee	0	Extra. Curi. Ac	0
Hostel Fee	0	Post / Telegram	0	Veri/Rev. Fee	0	Computerisation	0
Hostel Breakage	0	SCI.JOURNAL	0	Lib. Deposit	0	Equip. Maintanc	0
Term Fee	0	Canteen Rent	0	Xerox	0	Sci. Breakage	0
<b>Fee In Words:</b> Rupees One Thousand Six Hundred Only						<b>Paid Fee</b>	<b>1600</b>
<b>Narration:</b> Certificate Course in C Programming 16x100							

For Principal

K. J. SOMAIYA (PG) COLLEGE

Seal & Sig.



**K.J.SOMAIYA COLLEGE OF ARTS, COMMERCE AND SCIENCE  
KOPARGAON**

**Department of Mathematics  
Academic year 2019-20**

**Report**

<b>Name of the certificate course</b>	Principles of programming language
<b>Date and Duration</b>	12/12/2019 to 31/01/2020 30 Hours
<b>Name of faculty</b>	Mr. S.R. Ukirde Mr. G.M. Kunjir
<b>Number of participants enrolled</b>	16
<b>Venue</b>	Department of Mathematics


**Brief summary of activity/Event:**

Department of Mathematics runs a certificate course "Principles of programming language". The objective of the course is to develop logics that will help students to create programs. It also aims to provide exposure to problem-solving through programming. Head of the department Dr. B.D. Gavhane inaugurated this course.

The course content is made available to students. The students learn about programming language and solve mathematical problems using programs. Students studied the implementation of numerical analysis to solve problems in Mathematics for which a quantitative theory already exists.

**The outcome of activity/Event:**

1. Developed logic that helped students to create programs.
2. Students learned the basic programming constructs they can easily switch over to any other language in the future.

  
**Department of Mathematics  
K. J. Somaiya College, Kopargaon**

  
**Principal  
K. J. Somaiya College of Arts  
Commerce & Science, Kopargaon**



Kopargaon Taluka Education Society's  
**K.J.Somaiya College of Arts, Commerce & Science**

Mohanirajnagar, Kopargaon, Dist: Ahmednagar 423601

**Certificate Course**

On

**“Principles of Programming Language”**

Organized By

**Department of Mathematics**

**Certificate**



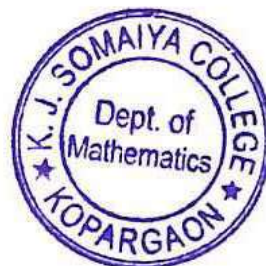
This is to certify that, \_\_\_\_\_  
has successfully completed the certificate course on ‘Principles of Programming  
Language’ in the academic year —/—.

**Dr. B.D. Gavhane**  
HOD (Mathematics)

**Dr. B.B. Bhosale**  
Science faculty I/C

**Dr. B.S. Yadav**  
Principal

**Head**  
Department of Mathematics  
K. J. Somaiya College, Kopargaon



**Principal**  
K.J.Somaiya College  
Kopargaon



Kopargaon Taluka Education Society's  
K. J. Somaiya College of Arts, Commerce & Science,  
Mohanirajnagar, Kopargaon, Dist: Ahmednagar.

**"Principles of Programming Language"**  
Certificate Course  
**Feedback Form**

Below are a series of statements. Please respond by circling the number you feel most reflects your opinion.

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
The course fulfilled the objectives set out in the brochure	5	4	3	2	1
The course satisfied my own needs and expectations	5	4	3	2	1
The content was presented at a level which could readily be understood	5	4	3	2	1
There was opportunity for group work	5	4	3	2	1
There was opportunity for individual participation	5	4	3	2	1
The material presented had practical relevance	5	4	3	2	1
The course content built on prior learning and experience	5	4	3	2	1
I feel I contributed to class discussion	5	4	3	2	1
I was motivated to learn	5	4	3	2	1
Course handouts & texts helped reinforce learning	5	4	3	2	1
There was a variety of teaching methods	5	4	3	2	1
The teaching methods used helped me learn effectively	5	4	3	2	1
The Teacher knew his/her subject thoroughly	5	4	3	2	1
The Teacher achieved a good rapport with the group	5	4	3	2	1
There was opportunity for feedback and evaluation	5	4	3	2	1

**Additional Comments** (Please feel free to continue comments overleaf)  
Which aspects of the course worked well?

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How could the course be improved? \_\_\_\_\_

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Would you recommend this course to others? If not, please outline your reasons.

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Any other comments, \_\_\_\_\_

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Name, Class & Signature: (optional) \_\_\_\_\_

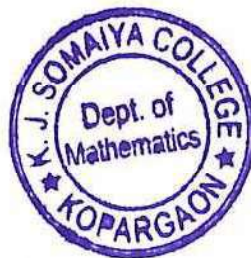
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Date: -----

*Thank you for taking the time to complete this form. Your input is an integral part of the evaluation and review process.*



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K. J. Somaiya College of Arts, Commerce & Science,  
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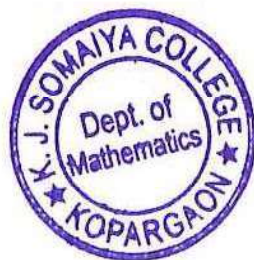
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**Head**  
**Department of Mathematics**  
**K. J. Somaiya College, Kopergaon**





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**Department of Mathematics**  
**K. J. Somaiya College, Kopergaon**

