



# VIMAL JYOTHI ENGINEERING COLLEGE

JYOTHI NAGAR, CHEMPERI - 670632, KANNUR, KERELA

Affiliated to APJ Abdul Kalam Technological University, Approved by AICTE  
ISO 9001 : 2015 Certified | Accredited by Institution of Engineers (India), NBA, NAAC  
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NAAC Cycle 2

Criterion: 1.2.1

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**VIMAL JYOTHI ENGINEERING COLLEGE, CHEMPERI**

**DEPARTMENT OF COMPUTER SCIENCE &  
ENGINEERING**

**Report on value added course**

***“Object Oriented Programming in  
Python  
for***

***S4 CSE- A, B,C (2021-25 BATCH)***

COMPUTER SCIENCE ENGINEERING DEPARTMENT  
PRESENTS TRAINING PROGRAM ON

# OBJECT ORIENTED PROGRAMMING IN PYTHON

15-03-2023 TO 19-03-2023

3 DAYS OFFLINE. 2 DAYS ONLINE WTH PROJECT

#### STAFF COORDINATORS :

MS. SUHADA C

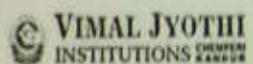
MS. MANJU M

(ASSISTANT PROFESSOR)

#### STUDENT COORDINATORS :

KAMAL SURESH - S4 CSE B

JUSTIN JAMES THOMAS - S4 CSE B



## **ADD-ON COURSE REPORT ON OBJECT ORIENTED PROGRAMMING IN PYTHON FOR S4 CSE-A, B, C STUDENTS**

An Add-on Course on Object Oriented Programming in Python was organized on March 15<sup>th</sup>, 16th, 17th, 18th and 19<sup>th</sup> at the Computer Center and Software lab of the CSE department. The aim of this course was to provide additional training to the 4th semester students on various aspects of Python. The course covered various topics including basic concepts, data structures, functions, object oriented concepts, python libraries, GUI and Micro services using Flask.

This report provides a summary of the course activities and its outcomes:

### **Day 1 (15<sup>th</sup> March):**

The Course began with an introduction to python programming. The trainer explained the usage of Interactive shell, IDLE, iPython Notebooks and installed Pycharm. By the end of the day, the students had a good understanding of basic coding skills, data structures and control statements. The students learned about the libraries used in python.

**Day 2 (16<sup>th</sup> March):** On the second day of the course, the students were introduced to List, Set, tuple and dictionary. The trainer explained various types of functions. The students were given hands-on training on how to write a python script and debug the programs.

**Day 3 (17<sup>th</sup> March):** The third day of the course focused on Object oriented concepts like Objects and Classes, Methods, Instance variables, Constructor, Accessor and Mutators. The students were given hands-on training on Data modeling examples and classes with inheritance and polymorphism. The trainer also discussed Abstract classes, Interface and Exceptions. By the end of the day, the students were able to create small projects.

**Day 4 (18<sup>th</sup> March):** On the fourth day of the course, the students were introduced to Flask to build lightweight web applications in python. The students were guided to build their first python website using the Flask framework.

**Day 5 (19th March):** On the fifth day of the program, the students developed simple python projects. The trainer discussed various career opportunities in the Python language.

The course was executed by Evolve Robotics, which is a leading organization in the field of robotics and artificial intelligence. The instructors were highly knowledgeable and experienced in their respective fields and provided valuable insights into the latest developments in machine learning and deep learning. Overall, this value-added course has provided a solid foundation in machine learning and deep learning, and the knowledge and skills that students have gained will be invaluable to their future academic and professional pursuits.

Mr.  
MANJU R.  
AP, CSE Dept  
Sukhadia  
A.P., CSE

## **Curriculum**

### **OBJECT ORIENTED PROGRAMMING IN PYTHON**

**Course Description:** The objective of the course is to equip the learners to develop multi-module software solutions for real world computational problems using Python. It encompasses the Python programming environment, syntax, data representations, intermediate level features, and Object-Oriented Programming. This course lays the foundation to develop modular software solutions.

**Course Objective:** Basic knowledge in Computational Problem Solving.

**Course Outcomes:** After the completion the course the student will be able to

|     |  |
|-----|--|
| CO1 | Write, test and debug Python programs  |
| CO2 | Illustrate uses of conditional (if, if-else and if-elif-else) and iterative (while and for) statements in Python programs. |
| CO3 | Develop programs by utilizing the Python programming concepts such as Lists,Tuples,Sets And Dictionaries.                  |
| CO4 | Develop graphical user interface for solutions using Python libraries.   |
| CO5 | Implement Object Oriented programs.  |

## Mapping Of Course Outcomes With Program Outcomes

**CO-PO Mapping (S: Strong, M: Medium, L: Low)**

|     | P<br>O<br>1 | P<br>O<br>2 | P<br>O<br>3 | P<br>O<br>4 | P<br>O<br>5 | P<br>O<br>6 | P<br>O<br>7 | P<br>O8 | P<br>O9 | P<br>O<br>10 | P<br>O<br>11 | P<br>O<br>12 |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|---------|--------------|--------------|--------------|
| CO1 | H           | M           | M           |             | H           |             |             |         |         |              |              | H            |
| CO2 | H           | M           | M           |             |             |             |             |         |         |              |              | H            |
| CO3 | H           | M           | M           | M           | H           |             |             |         |         |              |              | H            |
| CO4 | H           | M           | M           | M           | H           |             |             |         |         |              |              | H            |
| CO5 | H           | M           | M           | M           | H           |             |             |         |         |              |              | H            |

### Assessment Pattern:-

Total Marks: 50 Marks

Mini Project: 40 Marks

Quiz: 10 Marks

Project evaluation rubrics:

Quiz: A total of 10 questions carrying 1 mark each.

## Mapping Of Course Outcomes With Program Outcomes

**CO-PO Mapping (S: Strong, M: Medium, L: Low)**

|     | P<br>O<br>1 | P<br>O<br>2 | P<br>O<br>3 | P<br>O<br>4 | P<br>O<br>5 | P<br>O<br>6 | P<br>O<br>7 | P<br>O8 | PO<br>9 | P<br>O<br>10 | P<br>O<br>11 | P<br>O<br>12 |   |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|---------|--------------|--------------|--------------|---|
| CO1 | H           | M           | M           |             |             | H           |             |         |         |              |              |              | H |
| CO2 | H           | M           | M           |             |             |             |             |         |         |              |              |              | H |
| CO3 | H           | M           | M           | M           | H           |             |             |         |         |              |              |              | H |
| CO4 | H           | M           | M           | M           | H           |             |             |         |         |              |              |              | H |
| CO5 | H           | M           | M           | M           | H           |             |             |         |         |              |              |              | H |

### Assessment Pattern:-

Total Marks: 50 Marks

Mini Project: 40 Marks

Quiz: 10 Marks

Project evaluation rubrics:

Quiz: A total of 10 questions carrying 1 mark each.

## **Abstract POs defined by National Board of Accreditation**

| #PO | BroadPO                                    | #PO  | BroadPO                        |
|-----|--|------|--------------------------------|
| PO1 | Engineering Knowledge                      | PO7  | Environment and Sustainability |
| PO2 | Problem Analysis                           | PO8  | Ethics                         |
| PO3 | Design/Development Solutions               | PO9  | Individual and team work       |
| PO4 | Conduct Investigations Of complex problems | PO10 | Communication                  |
| PO5 | Modern Tool Usage                          | PO11 | Project Management and Finance |
| PO6 | The Engineer and Society                   | PO12 | Lifelong learning              |

## **SYLLABUS**

### **Module -1 (Programming Environment and Python Basics) (6 hours)**

Getting started with Python programming – Interactive shell, IDLE, iPython Notebooks, Anaconda, How Python works. Basic coding skills – Writing Your First Python Program - Data-types in Python - Numeric data types and character sets, strings, assignment, and comments, Variables in Python – Declaration and Use. Type casting in Python. Expressions, Operators in Python – Assignment, Logical, Arithmetic etc. Taking User Input (Console).

### **Module -2 (Python Data Structures) (6 hours)**

Conditional Statements – If else and Nested If else and elif Iteration with for/while loop, Formatting text for output, Selection structure (switch-case), Conditional iteration with while, Testing control statements, Lazy evaluation. Lists

- Basic list Operations and functions, List of lists, Slicing, Searching and sorting list, List comprehension. Work with tuples. Sets. Work with dates and times, Dictionaries - Dictionary functions, dictionary literals, adding and removing keys, accessing and replacing values, traversing dictionaries, reverse lookup.

### **Module – 3 (Functions)(6 hours)**

Functions - Hiding redundancy and complexity, Variable scopes and parameter passing, Named arguments, Main function, Working with recursion, User Defined Functions – Defining, Calling, Types of Functions, Arguments and return values, Lambda functions. Strings - String Manipulation – Basic Operations, Slicing & Functions and Methods.

### **Module – 4 (Object Oriented Programming)(6 hours)**

Design with classes - Objects and Classes, Methods, Instance Variables, Constructor, Accessors and Mutators. Structuring classes with Inheritance and Polymorphism. Abstract Classes. Exceptions - Handle a single exception, Handle multiple exceptions.

### **Module 5 (Micro services using Flask)(6 hours)**

Overview – Environment- Application-Routing-variable rule – URL building - HTTP methods- Templates - static files - Request object – Sending form data to template – cookie – sessions – Redirect and errors – Message flashing – File uploading – Sqlite – SQLAlchemy – Sijax – Deployment – Fast CGI.

## Teaching plan

### Module 1 (6 hours)

|   |        |
|---|--------|
| Getting started with Python programming – Interactive shell, IDLE, iPython Notebooks, Anaconda, | 1 hour |
| How Python works. Basic coding skills – Writing Your First Python Program                       | 1 hour |
| Data-types in Python - Numeric data types and character sets.                                   | 1 hour |
| Strings, assignment, and comments, Variables in Python – Declaration and Use.                   | 1 hour |
| Type casting in Python. Expressions.  | 1 hour |
| Operators in Python – Assignment, Logical, Arithmetic etc.<br>Taking User Input (Console)       | 1 hour |

### Module 2 (6 hours)

|  |        |
|--|--------|
| Conditional Statements – If else and Nested If else and elif<br>Iteration with for/while loop. | 1 hour |
| Formatting text for output, Selection structure (switch- case).                                | 1 hour |
| Conditional iteration with while, Testing control statements, Lazy evaluation.                 | 1 hour |

|  |        |
|--|--------|
| Lists - Basic list Operations and functions, List of lists, Slicing, Searching and sorting list, List comprehension.   | 1 hour |
| Work with tuples. Sets. Work with dates and times.   | 1 hour |
| Dictionaries - Dictionary functions, dictionary literals, adding and removing keys, accessing and replacing values, traversing dictionaries, reverse lookup. | 1 hour |

### Module 3 (6 hours)

|  |        |
|--|--------|
| Functions - Hiding redundancy and complexity.                                      | 1 hour |
| Variable scopes and parameter passing, Named arguments, Main function.             | 1 hour |
| Working with recursion, User Defined Functions – Defining, Calling.                | 1 hour |
| Types of Functions, Arguments and return values.                                   | 1 hour |
| Lambda functions.  | 1 hour |
| Strings - String Manipulation – Basic Operations, Slicing & Functions and Methods. | 1 hour |

## **Module 4 (6 hours)**

|   |        |
|---|--------|
| Design with classes - Objects and Classes.                          | 1 hour |
| Methods, Instance Variables.  | 1 hour |
| Constructor, Accessors and Mutators.                                | 1 hour |
| Structuring classes with Inheritance and Polymorphism.              | 1 hour |
| Abstract Classes.   | 1 hour |
| Exceptions - Handle a single exception, Handle multiple exceptions. | 1 hour |

## **Module 5 (6 hours)**

|   |        |
|---|--------|
| Overview – Environment- Application-Routing-variable rule             | 1 hour |
| URL building - HTTP methods   | 1 hour |
| Templates - static files  | 1 hour |
| Request object – Sending form data to template – cookie – sessions    | 1 hour |
| Redirect and errors – Message flashing                                | 1 hour |
| File uploading – Sqlite – SQLAlchemy – Sijax – Deployment – Fast CGI. | 1 hour |

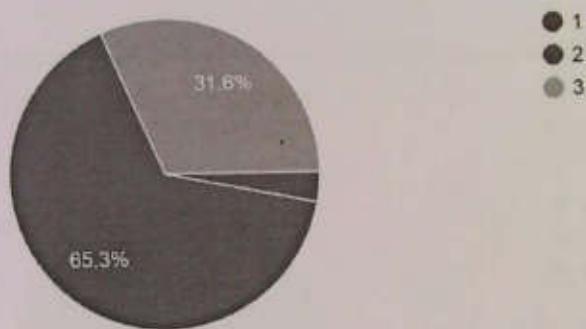
*Ans*  
MOULANA M.

## **Books:**

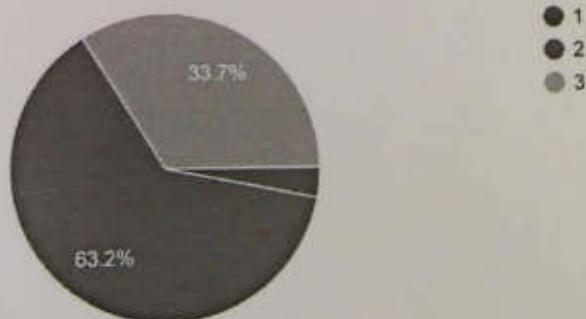
1. Kenneth A Lambert., Fundamentals of Python: First Programs, 2/e, Cengage Publishing, 2016
2. Wes McKinney, Python for Data Analysis, 2/e, Shroff/O'Reilly Publishers, 2017
3. Flask: Building Python web services, Jack Stouffer, Shalabh Aggarwal, Gareth Dwyer, PACKTPublishing Limited, 2018

## **Feedback from students:**

On a scale of 1 to 3 how do you rate the add-on course classes? 1 - Poor 2 - Satisfactory 3 - Excellent  
95 responses

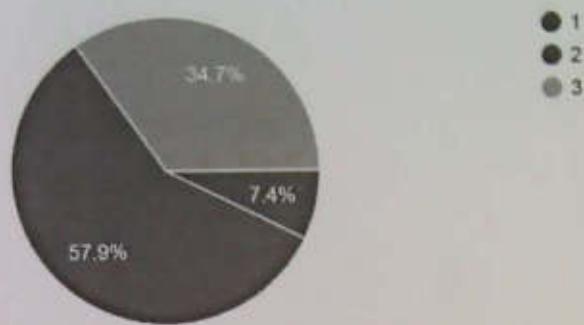


The software and tools discussed during this event were relevant and met your curriculum gaps.(PO1,PO3,PO5) 1 - Poor, 2 - Satisfactory, 3 - Excellent  
95 responses



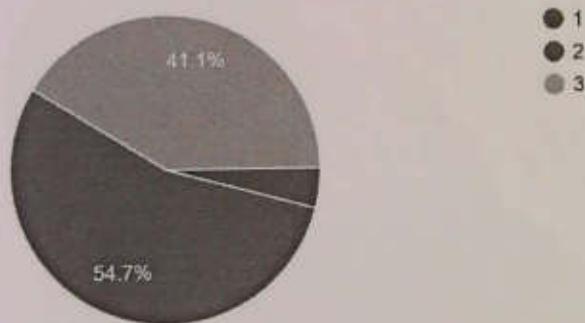
You got sufficient opportunity for exploring your creativity, technical skills and improving your design ideas in Python language? (PO3, PO5) 1 - Poor 2 - Satisfactory 3 - Excellent

95 responses

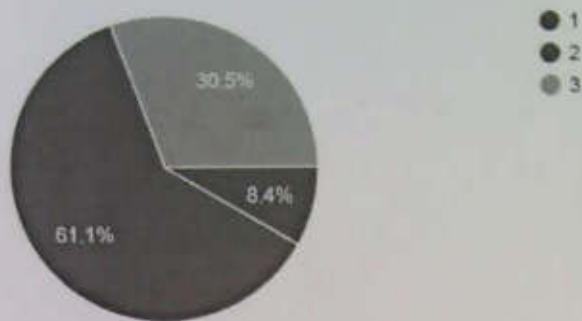


Were you able to perform effectively as an individual and as a team, and follow the instructions?  
(PO12) 1 - Poor 2 - Satisfactory 3 - Excellent

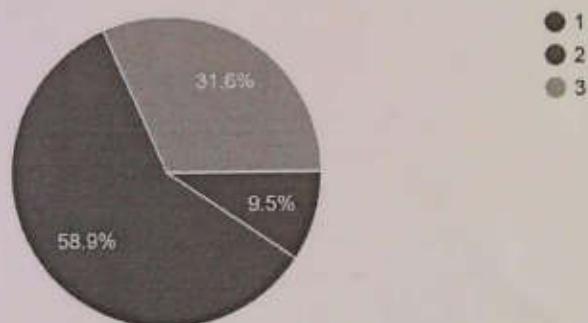
95 responses



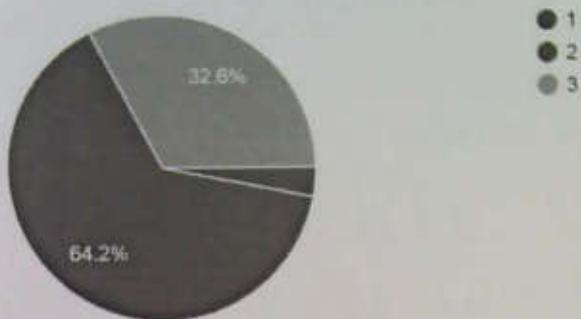
Were you able to analyse and implement complex problems ? (PO2 and PO4) 1 - Poor 2 - Satisfactory 3 - Excellent  
95 responses



The software tools helped you in designing and developing a demonstrable project, which can be used in industrial sectors. ( PO5, PO12) 1 - Poor 2 - Satisfactory 3 - Excellent  
95 responses



What is your level of learning in Python programming after this add-on course? 1 - Poor 2 - Satisfactory 3 - Excellent  
95 responses



*Ans*

MANJU M.

AP, CSE

## SAMPLE CERTIFICATE



VIMAL JYOTHI  
ENGINEERING COLLEGE  
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

VALUE ADDED COURSE ON  
"OBJECT ORIENTED PROGRAMMING USING PYTHON"

# CERTIFICATE OF PARTICIPATION

THE FOLLOWING AWARD IS GIVEN TO

**AKASH SANTHOSH**

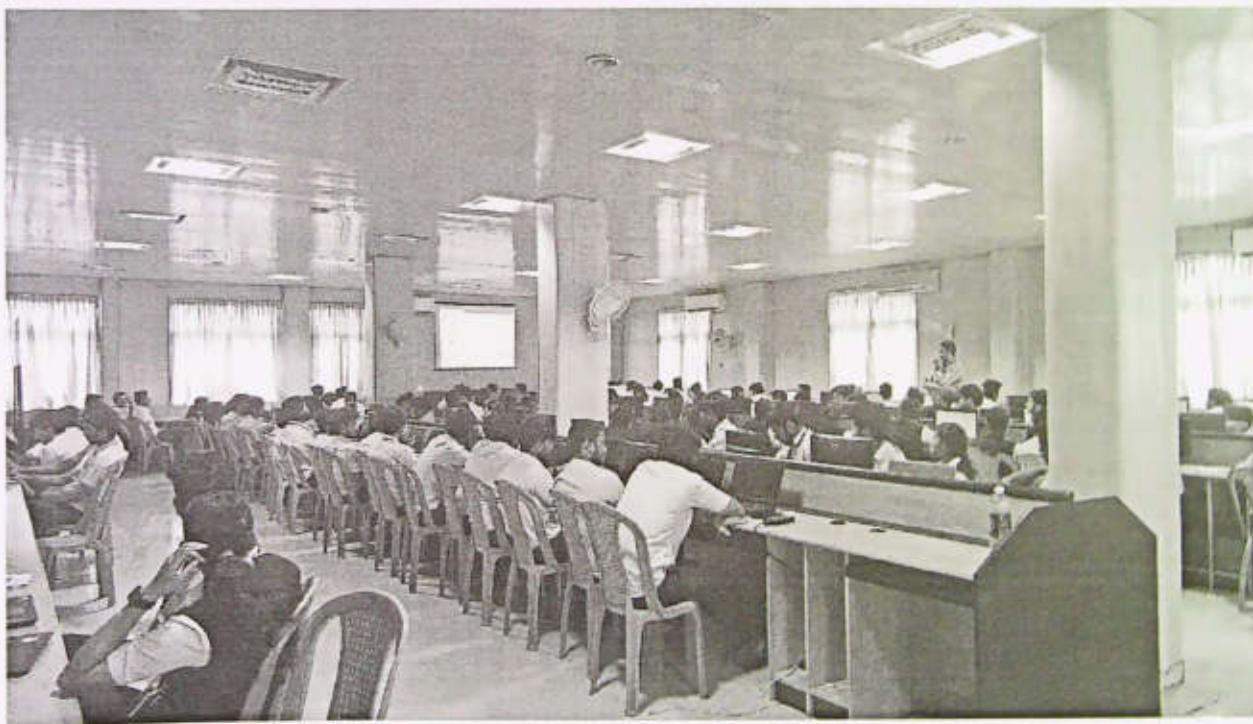
HAS PARTICIPATED VALUE ADDED COURSE PROGRAMME ON "OBJECT ORIENTED PROGRAMMING USING PYTHON" ORGANISED BY THE DEPARTMENT OF COMPUTER SCIENCE ENGINEERING, VIMAL JYOTHI ENGINEERING COLLEGE IN ASSOCIATION WITH PROGRESSUM  
ON 15th to 19th MARCH 2023

Convener  
**Miss.Divya B**  
H.o.D,CSE



**Dr.Benny Joseph**  
Principal

## PHOTOS





*Manju M*  
MANJU M  
AP/CSE

**VIMAL JYOTHI ENGINEERING COLLEGE**  
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

Batch : 2021-2025 CSE A

Year of study: 2021-2025

Name of the Subject with code: ADCS401- OBJECT ORIENTED PROGRAMMING IN PYTHON

Name of the Staff: MANJU M. AND SUHADA C.

No of students:

61

|     |  |
|-----|--|
| CO1 | Provides a clear knowledge of how to write, test and debug Python programs.              |
| CO2 | Illustrates the use of conditional and iterative statements in Python programs.          |
| CO3 | Understand data structures such as Lists, Tuples, Sets And Dictionaries.                 |
| CO4 | Understand how to develop graphical user interface for solutions using Python libraries. |
| CO5 | Design, build, and deploy Object Oriented Programming applications.                      |

|         | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO 1    | 3   | 2   | 2   | -   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 2    | 3   | 2   | 2   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 3    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 4    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 5    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| AVERAGE | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |

Attainment Level      Attainment score given, when

Attainment Level 1 50 % of students score more than 45%

Attainment Level 2 60 % of students score more than 45%

Attainment Level 3 70 % of students score more than 45%

**CO 1**

| SL. No. | Register No. | Name of the student     | <b>Project Design</b>   |
|---------|--------------|-------------------------|---|
|         |              |                         | Provides a clear knowledge of how to write, test and debug Python programs. |
| 1       | VML21CS001   | Aadityan Harindran      | 3   |
| 2       | VML21CS010   | Abhinav M V             | 3   |
| 3       | VML21CS013   | Abhiram A               | 3   |
| 4       | VML21CS015   | Abhiram S Manoj         | 3   |
| 5       | VML21CS018   | Abin M Jose             | 3   |
| 6       | VML21CS021   | Adith Narayanan         | 3   |
| 7       | VML21CS024   | Agney J Purushotham     | 3   |
| 8       | VML21CS027   | Akash Santhosh          | 3   |
| 9       | VML21CS029   | Akhil Mathew George     | 3   |
| 10      | VML21CS034   | Albert Jose             | 3   |
| 11      | VML21CS037   | Alen Biju               | 3   |
| 12      | VML21CS038   | Alen Cherian            | 3   |
| 13      | VML21CS039   | Alen Kurian Joseph      | 3   |
| 14      | VML21CS040   | Alen.t.tom              | 3   |
| 15      | VML21CS042   | Alfi Siby               | 3   |
| 16      | VML21CS044   | Amal Cs                 | 3   |
| 17      | VML21CS047   | Amalroy                 | 3   |
| 18      | VML21CS050   | Amith T.v               | 3   |
| 19      | VML21CS053   | Anandhu Poyyil          | 3   |
| 20      | VML21CS056   | Ananya Praseed Kumar    | 3   |
| 21      | VML21CS062   | Aparna Bhaskar          | 3   |
| 22      | VML21CS063   | Arjun. Av               | 3   |
| 23      | VML21CS065   | Arjun.madathil          | 3   |
| 24      | VML21CS068   | Armond Jose             | 3   |
| 25      | VML21CS071   | Ashik Jhonson           | 3   |
| 26      | VML21CS074   | Aswin Udayan            | 3   |
| 27      | VML21CS076   | Athul Joy               | 3   |
| 28      | VML21CS079   | Azzah Waheed            | 3   |
| 29      | VML21CS082   | Darvin Sibi             | 3   |
| 30      | VML21CS085   | Dhanus Joy              | 3   |
| 31      | VML21CS091   | Gerald Siriac           | 3   |
| 32      | VML21CS094   | Goutham S Prasad        | 3   |
| 33      | VML21CS097   | Hooriyya Binth Khalid   | 3   |
| 34      | VML21CS098   | Jagath K                | 3   |
| 35      | VML21CS100   | Jeffin Jiju             | 3   |
| 36      | VML21CS103   | Jestin K S              | 3   |
| 37      | VML21CS109   | Joyal M Joseph          | 3   |
| 38      | VML21CS113   | Karthika K P            | 3   |
| 39      | VML21CS116   | K K Krishnanjana Deepak | 3   |
| 40      | VML21CS118   | Lithin Krishnan         | 3   |
| 41      | VML21CS120   | Manasa N                | 3   |

|   |            |                      |             |
|---|------------|----------------------|-------------|
| 42  | VML21CS123 | Mridula P T          | 3           |
| 43  | VML21CS126 | Muhammed Sabeeh C K  | 3           |
| 44  | VML21CS130 | Nadha A P            | 3           |
| 45  | VML21CS134 | Narthana Prasanth    | 3           |
| 46  | VML21CS136 | Navendu C            | 3           |
| 47  | VML21CS139 | Nived Manoj          | 3           |
| 48  | VML21CS142 | P J Joseph           | 3           |
| 49  | VML21CS145 | Rithika Reejith      | 3           |
| 50  | VML21CS148 | Rohit Philip         | 3           |
| 51  | VML21CS151 | Sanjiv R             | 3           |
| 52  | VML21CS157 | Seetha Lakshmi K A P | 3           |
| 53  | VML21CS160 | Shawn Rajeev         | 3           |
| 54  | VML21CS162 | Shizin Abdul Nasar P | 3           |
| 55  | VML21CS164 | Sivada N Rajeev      | 3           |
| 56  | VML21CS167 | Sreelakshmi V V      | 3           |
| 57  | VML21CS169 | Sreya Pavanan        | 3           |
| 58  | VML21CS172 | Tanvi Prashanth      | 3           |
| 59  | VML21CS175 | Treesa Sinta Saji    | 3           |
| 60  | VML21CS178 | Vaishnav Valsan      | 3           |
| 61  | VML21CS184 | Vyshnav Rajesh       | 3           |
| <b>Tot:- Number of students attended</b>                          |            |                      | <b>61</b>   |
| <b>Target (45%) Mark</b>  |            |                      | <b>1.35</b> |
| <b>Total Number of students who have achieved Target ( 45 % )</b> |            |                      | <b>61</b>   |
| <b>Attainment percentage</b>                                      |            |                      | <b>100</b>  |
| <b>Attainment Level</b>   |            |                      | <b>3</b>    |
| <b>Total Attainment OF Each section</b>                           |            |                      | <b>3</b>    |
| <b>Project Attainment</b>   |            |                      | <b>3</b>    |
| <b>Other Assessment</b>   |            |                      | <b>0</b>    |

| CO 2       |              |                         |  |      |
|------------|--------------|-------------------------|--|------|
| SL.<br>No. | Register No. | Name of the student     | Project Design   | QUIZ |
|            |              |                         | Illustrates the use of conditional (if, if-else and if-elif-else) and iterative (while and for) statements in Python programs. |      |
|            |              | <b>Max Mark</b>         | 3  | 10   |
| 1          | VML21CS001   | Aadityan Harindran      | 3  | -    |
| 2          | VML21CS010   | Abhinav M V             | 3  | -    |
| 3          | VML21CS013   | Abhiram A               | 3  | -    |
| 4          | VML21CS015   | Abhiram S Manoj         | 3  | -    |
| 5          | VML21CS018   | Abin M Jose             | 3  | -    |
| 6          | VML21CS021   | Adith Narayanan         | 3  | -    |
| 7          | VML21CS024   | Agney J Purushotham     | 3  | -    |
| 8          | VML21CS027   | Akash Santhosh          | 3  | 5    |
| 9          | VML21CS029   | Akhil Mathew George     | 3  | 7    |
| 10         | VML21CS034   | Albert Jose             | 3  | 7    |
| 11         | VML21CS037   | Alen Biju               | 3  | -    |
| 12         | VML21CS038   | Alen Cherian            | 3  | 7    |
| 13         | VML21CS039   | Alen Kurian Joseph      | 3  | 8    |
| 14         | VML21CS040   | Alen.t.tom              | 3  | -    |
| 15         | VML21CS042   | Alfi Siby               | 3  | -    |
| 16         | VML21CS044   | Amal Cs                 | 3  | 7    |
| 17         | VML21CS047   | Amalroy                 | 3  | -    |
| 18         | VML21CS050   | Amith T.v               | 3  | -    |
| 19         | VML21CS053   | Anandhu Poyyil          | 3  | -    |
| 20         | VML21CS056   | Ananya Praseed Kumar    | 3  | 6    |
| 21         | VML21CS062   | Aparna Bhaskar          | 3  | 2    |
| 22         | VML21CS063   | Arjun. Av               | 3  | -    |
| 23         | VML21CS065   | Arjun.madathil          | 3  | -    |
| 24         | VML21CS068   | Armond Jose             | 3  | 4    |
| 25         | VML21CS071   | Ashik Jhonson           | 3  | 7    |
| 26         | VML21CS074   | Aswin Udayan            | 3  | 7    |
| 27         | VML21CS076   | Athul Joy               | 3  | -    |
| 28         | VML21CS079   | Azzah Waheed            | 3  | 6    |
| 29         | VML21CS082   | Darvin Sibi             | 3  | -    |
| 30         | VML21CS085   | Dhanus Joy              | 3  | -    |
| 31         | VML21CS091   | Gerald Siriac           | 3  | 5    |
| 32         | VML21CS094   | Goutham S Prasad        | 3  | 3    |
| 33         | VML21CS097   | Hooriyya Binth Khalid   | 3  | 5    |
| 34         | VML21CS098   | Jagath K                | 3  | -    |
| 35         | VML21CS100   | Jeffin Jiju             | 3  | -    |
| 36         | VML21CS103   | Jestin K S              | 3  | 6    |
| 37         | VML21CS109   | Joyal M Joseph          | 3  | 7    |
| 38         | VML21CS113   | Karthika K P            | 3  | 2    |
| 39         | VML21CS116   | K K Krishnanjana Deepak | 3  | -    |

|  |            |                      |             |                     |
|--|------------|----------------------|-------------|---------------------|
| 40   | VML21CS118 | Lithin Krishnan      | 3           | -                   |
| 41   | VML21CS120 | Manasa N             | 3           | -                   |
| 42   | VML21CS123 | Mridula P T          | 3           | -                   |
| 43   | VML21CS126 | Muhammed Sabeeh C K  | 3           | -                   |
| 44   | VML21CS130 | Nadha A P            | 3           | -                   |
| 45   | VML21CS134 | Narthana Prasanth    | 3           | 5                   |
| 46   | VML21CS136 | Navendu C            | 3           | -                   |
| 47   | VML21CS139 | Nived Manoj          | 3           | -                   |
| 48   | VML21CS142 | P J Joseph           | 3           | -                   |
| 49   | VML21CS145 | Rithika Reejith      | 3           | -                   |
| 50   | VML21CS148 | Rohit Philip         | 3           | -                   |
| 51   | VML21CS151 | Sanjiv R             | 3           | 8                   |
| 52   | VML21CS157 | Seetha Lakshmi K A P | 3           | 4                   |
| 53   | VML21CS160 | Shawn Rajeev         | 3           | -                   |
| 54   | VML21CS162 | Shizin Abdul Nasar P | 3           | -                   |
| 55   | VML21CS164 | Sivada N Rajeev      | 3           | 6                   |
| 56   | VML21CS167 | Sreelakshmi V V      | 3           | -                   |
| 57   | VML21CS169 | Sreya Pavanam        | 3           | 4                   |
| 58   | VML21CS172 | Tanvi Prashanth      | 3           | 3                   |
| 59   | VML21CS175 | Treesa Sinta Saji    | 3           | -                   |
| 60   | VML21CS178 | Vaishnav Valsan      | 3           | -                   |
| 61   | VML21CS184 | Vyshnav Rajesh       | 3           | -                   |
| <b>Total Number of students attended</b>                   |            |                      | <b>61</b>   | <b>24</b>           |
| <b>Target (45%) Mark</b>                                   |            |                      | <b>1.35</b> | <b>4.5</b>          |
| <b>Total Number of students who have achieved Target (</b> |            |                      | <b>61</b>   | <b>17</b>           |
| <b>Attainment percentage</b>                               |            |                      | <b>100</b>  | <b>70.833333333</b> |
| <b>Attainment Level</b>                                    |            |                      | <b>3</b>    | <b>3</b>            |
| <b>Total Attainment OF Each section</b>                    |            |                      | <b>3</b>    | <b>3</b>            |
| <b>Project Attainment</b>                                  |            |                      | <b>3</b>    |                     |
| <b>Other Assessment</b>                                    |            |                      | <b>3</b>    |                     |

**CO 3**

| <b>SL. No.</b> | <b>Register No.</b> | <b>Name of the student</b> | <b>Project Design</b>  |
|----------------|---------------------|----------------------------|--|
|                |                     |                            | Provides a clear and accurate description of how to develop programs by utilizing the concepts such as Lists, Tuples, Sets And Dictionaries. |
|                |                     | <b>Max Mark</b>            | 3  |
| 1              | VML21CS001          | Aadityan Harindran         | 3  |
| 2              | VML21CS010          | Abhinav M V                | 3  |
| 3              | VML21CS013          | Abhiram A                  | 3  |
| 4              | VML21CS015          | Abhiram S Manoj            | 3  |
| 5              | VML21CS018          | Abin M Jose                | 3  |
| 6              | VML21CS021          | Adith Narayanan            | 3  |
| 7              | VML21CS024          | Agney J Purushotham        | 3  |
| 8              | VML21CS027          | Akash Santhosh             | 3  |
| 9              | VML21CS029          | Akhil Mathew George        | 3  |
| 10             | VML21CS034          | Albert Jose                | 3  |
| 11             | VML21CS037          | Alen Biju                  | 3  |
| 12             | VML21CS038          | Alen Cherian               | 3  |
| 13             | VML21CS039          | Alen Kurian Joseph         | 3  |
| 14             | VML21CS040          | Alen.t.tom                 | 3  |
| 15             | VML21CS042          | Alfi Siby                  | 3  |
| 16             | VML21CS044          | Amal Cs                    | 3  |
| 17             | VML21CS047          | Amalroy                    | 3  |
| 18             | VML21CS050          | Amith T.v                  | 3  |
| 19             | VML21CS053          | Anandhu Poyyil             | 3  |
| 20             | VML21CS056          | Ananya Praseed Kumar       | 3  |
| 21             | VML21CS062          | Aparna Bhaskar             | 3  |
| 22             | VML21CS063          | Arjun. Av                  | 3  |
| 23             | VML21CS065          | Arjun.madathil             | 3  |
| 24             | VML21CS068          | Armond Jose                | 3  |
| 25             | VML21CS071          | Ashik Jhonson              | 3  |
| 26             | VML21CS074          | Aswin Udayan               | 3  |
| 27             | VML21CS076          | Athul Joy                  | 3  |
| 28             | VML21CS079          | Azzah Waheed               | 3  |
| 29             | VML21CS082          | Darvin Sibi                | 3  |
| 30             | VML21CS085          | Dhanus Joy                 | 3  |
| 31             | VML21CS091          | Gerald Siriac              | 3  |
| 32             | VML21CS094          | Goutham S Prasad           | 3  |
| 33             | VML21CS097          | Hooriyya Binth Khalid      | 3  |
| 34             | VML21CS098          | Jagath K                   | 3  |
| 35             | VML21CS100          | Jeffin Jiju                | 3  |
| 36             | VML21CS103          | Jestin K S                 | 3  |
| 37             | VML21CS109          | Joyal M Joseph             | 3  |
| 38             | VML21CS113          | Karthika K P               | 3  |

|   |            |                         |      |
|---|------------|-------------------------|------|
| 39  | VML21CS116 | K K Krishnanjana Deepak | 3    |
| 40  | VML21CS118 | Lithin Krishnan         | 3    |
| 41  | VML21CS120 | Manasa N                | 3    |
| 42  | VML21CS123 | Mridula P T             | 3    |
| 43  | VML21CS126 | Muhammed Sabeeh C K     | 3    |
| 44  | VML21CS130 | Nadha A P               | 3    |
| 45  | VML21CS134 | Narthana Prasanth       | 3    |
| 46  | VML21CS136 | Navendu C               | 3    |
| 47  | VML21CS139 | Nived Manoj             | 3    |
| 48  | VML21CS142 | P J Joseph              | 3    |
| 49  | VML21CS145 | Rithika Reejith         | 3    |
| 50  | VML21CS148 | Rohit Philip            | 3    |
| 51  | VML21CS151 | Sanjiv R                | 3    |
| 52  | VML21CS157 | Seetha Lakshmi K A P    | 3    |
| 53  | VML21CS160 | Shawn Rajeev            | 3    |
| 54  | VML21CS162 | Shizin Abdul Nasar P    | 3    |
| 55  | VML21CS164 | Sivada N Rajeev         | 3    |
| 56  | VML21CS167 | Sreelakshmi V V         | 3    |
| 57  | VML21CS169 | Sreya Pavanan           | 3    |
| 58  | VML21CS172 | Tanvi Prashanth         | 3    |
| 59  | VML21CS175 | Treesa Sinta Saji       | 3    |
| 60  | VML21CS178 | Vaishnav Valsan         | 3    |
| 61  | VML21CS184 | Vyshnav Rajesh          | 3    |
| <b>Total Number of students attended</b>                          |            |                         | 61   |
| <b>Target (45%) Mark</b>  |            |                         | 1.35 |
| <b>Total Number of students who have achieved Target ( 45 % )</b> |            |                         | 61   |
| <b>Attainment percentage</b>                                      |            |                         | 100  |
| <b>Attainment Level</b>   |            |                         | 3    |
| <b>Total Attainment OF Each section</b>                           |            |                         | 3    |
| <b>Project Attainment</b>   |            |                         | 3    |
| <b>Other Assessment</b>   |            |                         | 0    |

**CO 4**

| SL.<br>No. | Register No. | Name of the student   | Project Design  | Implementation   |
|------------|--------------|-----------------------|---|--|
|            |              |                       | Provides a clear knowledge of how to develop graphical user interface for solutions using Python libraries. | Demonstrates proficiency in using Python and Flask , to develop the object oriented application. |
| 1          | VML21CS001   | Aadityan Harindran    | 3   | 10   |
| 2          | VML21CS010   | Abhinav M V           | 3   | 10   |
| 3          | VML21CS013   | Abhiram A             | 3   | 10   |
| 4          | VML21CS015   | Abhiram S Manoj       | 3   | 10   |
| 5          | VML21CS018   | Abin M Jose           | 3   | 10   |
| 6          | VML21CS021   | Adith Narayanan       | 3   | 10   |
| 7          | VML21CS024   | Agney J Purushotham   | 3   | 10   |
| 8          | VML21CS027   | Akash Santhosh        | 3   | 10   |
| 9          | VML21CS029   | Akhil Mathew George   | 3   | 10   |
| 10         | VML21CS034   | Albert Jose           | 3   | 10   |
| 11         | VML21CS037   | Alen Biju             | 3   | 10   |
| 12         | VML21CS038   | Alen Cherian          | 3   | 10   |
| 13         | VML21CS039   | Alen Kurian Joseph    | 3   | 10   |
| 14         | VML21CS040   | Alen.t.tom            | 3   | 10   |
| 15         | VML21CS042   | Alfi Siby             | 3   | 10   |
| 16         | VML21CS044   | Amal Cs               | 3   | 10   |
| 17         | VML21CS047   | Amalroy               | 3   | 10   |
| 18         | VML21CS050   | Amith T.v             | 3   | 10   |
| 19         | VML21CS053   | Anandhu Poyyil        | 3   | 10   |
| 20         | VML21CS056   | Ananya Praseed Kumar  | 3   | 10   |
| 21         | VML21CS062   | Aparna Bhaskar        | 2   | 10   |
| 22         | VML21CS063   | Arjun. Av             | 2   | 10   |
| 23         | VML21CS065   | Arjun.madathil        | 2   | 10   |
| 24         | VML21CS068   | Armond Jose           | 2   | 10   |
| 25         | VML21CS071   | Ashik Jhonson         | 2   | 10   |
| 26         | VML21CS074   | Aswin Udayan          | 2   | 10   |
| 27         | VML21CS076   | Athul Joy             | 2   | 10   |
| 28         | VML21CS079   | Azzah Waheed          | 2   | 10   |
| 29         | VML21CS082   | Darvin Sibi           | 2   | 10   |
| 30         | VML21CS085   | Dhanus Joy            | 2   | 10   |
| 31         | VML21CS091   | Gerald Siriac         | 3   | 10   |
| 32         | VML21CS094   | Goutham S Prasad      | 3   | 10   |
| 33         | VML21CS097   | Hooriyya Binth Khalid | 3   | 10   |
| 34         | VML21CS098   | Jagath K              | 3   | 10   |
| 35         | VML21CS100   | Jeffin Jiju           | 3   | 10   |
| 36         | VML21CS103   | Jestin K S            | 3   | 10   |
| 37         | VML21CS109   | Joyal M Joseph        | 3   | 10   |
| 38         | VML21CS113   | Karthika K P          | 3   | 10   |

|   |            |                         |     |    |
|---|------------|-------------------------|-----|----|
| 39  | VML21CS116 | K K Krishnanjana Deepak | 3   | 10 |
| 40  | VML21CS118 | Lithin Krishnan         | 3   | 10 |
| 41  | VML21CS120 | Manasa N                | 3   | 10 |
| 42  | VML21CS123 | Mridula P T             | 3   | 10 |
| 43  | VML21CS126 | Muhammed Sabeeh C K     | 3   | 10 |
| 44  | VML21CS130 | Nadha A P               | 3   | 10 |
| 45  | VML21CS134 | Narthana Prasanth       | 3   | 10 |
| 46  | VML21CS136 | Navendu C               | 3   | 10 |
| 47  | VML21CS139 | Nived Manoj             | 3   | 10 |
| 48  | VML21CS142 | P J Joseph              | 3   | 10 |
| 49  | VML21CS145 | Rithika Reejith         | 3   | 10 |
| 50  | VML21CS148 | Rohit Philip            | 3   | 10 |
| 51  | VML21CS151 | Sanjiv R                | 3   | 10 |
| 52  | VML21CS157 | Seetha Lakshmi K A P    | 3   | 10 |
| 53  | VML21CS160 | Shawn Rajeev            | 3   | 10 |
| 54  | VML21CS162 | Shizin Abdul Nasar P    | 3   | 10 |
| 55  | VML21CS164 | Sivada N Rajeev         | 3   | 10 |
| 56  | VML21CS167 | Sreelakshmi V V         | 3   | 10 |
| 57  | VML21CS169 | Sreya Pavanan           | 3   | 10 |
| 58  | VML21CS172 | Tanvi Prashanth         | 3   | 10 |
| 59  | VML21CS175 | Treesa Sinta Saji       | 3   | 10 |
| 60  | VML21CS178 | Vaishnav Valsan         | 3   | 10 |
| 61  | VML21CS184 | Vyshnav Rajesh          | 3   | 10 |
| <b>Total Number of students attended</b>          |            | 61                      | 61  |    |
| <b>Target (45%) Mark</b>                          |            | 1.35                    | 4.5 |    |
| <b>Total Number of students who have achieved</b> |            | 61                      | 61  |    |
| <b>Attainment percentage</b>                      |            | 100                     | 100 |    |
| <b>Attainment Level</b>                           |            | 3                       | 3   |    |
| <b>Total Attainment OF Each section</b>           |            | 3                       |     |    |
| <b>Project Attainment</b>                         |            | 3                       |     |    |
| <b>Other Assessment</b>                           |            | 0                       |     |    |

| CO 5    |              |                       |  |                                       |  |
|---------|--------------|-----------------------|--|---------------------------------------|--|
| SL. No. | Register No. | Name of the student   | Project Design   | Implementation                        | Report   |
|         |              |                       | Provides successful implementation of the design using Object Oriented concepts. | Successfully deploys the application. | Includes project objective, project design and implementation, results and analysis, conclusion and future work, and references. |
|         |              | Max Mark              |  |                                       |  |
| 1       | VML21CS001   | Aadityan Harindran    | 3  | 10                                    | 5  |
| 2       | VML21CS010   | Abhinav M V           | 3  | 10                                    | 5  |
| 3       | VML21CS013   | Abhiram A             | 3  | 10                                    | 5  |
| 4       | VML21CS015   | Abhiram S Manoj       | 3  | 10                                    | 5  |
| 5       | VML21CS018   | Abin M Jose           | 3  | 10                                    | 5  |
| 6       | VML21CS021   | Adith Narayanan       | 3  | 10                                    | 5  |
| 7       | VML21CS024   | Agney J Purushotham   | 3  | 10                                    | 5  |
| 8       | VML21CS027   | Akash Santhosh        | 3  | 10                                    | 5  |
| 9       | VML21CS029   | Akhil Mathew George   | 3  | 10                                    | 5  |
| 10      | VML21CS034   | Albert Jose           | 3  | 10                                    | 5  |
| 11      | VML21CS037   | Alen Biju             | 3  | 10                                    | 5  |
| 12      | VML21CS038   | Alen Cherian          | 3  | 10                                    | 5  |
| 13      | VML21CS039   | Alen Kurian Joseph    | 3  | 10                                    | 5  |
| 14      | VML21CS040   | Alen.t.tom            | 3  | 10                                    | 5  |
| 15      | VML21CS042   | Alfi Siby             | 3  | 10                                    | 5  |
| 16      | VML21CS044   | Amal Cs               | 3  | 10                                    | 5  |
| 17      | VML21CS047   | Amalroy               | 3  | 10                                    | 5  |
| 18      | VML21CS050   | Amith T.v             | 3  | 10                                    | 5  |
| 19      | VML21CS053   | Anandhu Poyyil        | 3  | 10                                    | 5  |
| 20      | VML21CS056   | Ananya Praseed Kumar  | 3  | 10                                    | 5  |
| 21      | VML21CS062   | Aparna Bhaskar        | 2  | 10                                    | 5  |
| 22      | VML21CS063   | Arjun. Av             | 2  | 10                                    | 5  |
| 23      | VML21CS065   | Arjun.madathil        | 2  | 10                                    | 5  |
| 24      | VML21CS068   | Armond Jose           | 2  | 10                                    | 5  |
| 25      | VML21CS071   | Ashik Jhonson         | 2  | 10                                    | 5  |
| 26      | VML21CS074   | Aswin Udayan          | 2  | 10                                    | 5  |
| 27      | VML21CS076   | Athul Joy             | 2  | 10                                    | 5  |
| 28      | VML21CS079   | Azzah Waheed          | 2  | 10                                    | 5  |
| 29      | VML21CS082   | Darvin Sibi           | 2  | 10                                    | 5  |
| 30      | VML21CS085   | Dhanus Joy            | 2  | 10                                    | 5  |
| 31      | VML21CS091   | Gerald Siriac         | 3  | 10                                    | 5  |
| 32      | VML21CS094   | Goutham S Prasad      | 3  | 10                                    | 5  |
| 33      | VML21CS097   | Hooriyya Binth Khalid | 3  | 10                                    | 5  |
| 34      | VML21CS098   | Jagath K              | 3  | 10                                    | 5  |
| 35      | VML21CS100   | Jeffin Jiju           | 3  | 10                                    | 5  |

|   |            |                         |      |     |      |
|---|------------|-------------------------|------|-----|------|
| 36  | VML21CS103 | Jestin K S              | 3    | 10  | 5    |
| 37  | VML21CS109 | Joyal M Joseph          | 3    | 10  | 5    |
| 38  | VML21CS113 | Karthika K P            | 3    | 10  | 5    |
| 39  | VML21CS116 | K K Krishnanjana Deepak | 3    | 10  | 5    |
| 40  | VML21CS118 | Lithin Krishnan         | 3    | 10  | 5    |
| 41  | VML21CS120 | Manasa N                | 3    | 10  | 5    |
| 42  | VML21CS123 | Mridula P T             | 3    | 10  | 5    |
| 43  | VML21CS126 | Muhammed Sabeeh C K     | 3    | 10  | 5    |
| 44  | VML21CS130 | Nadha A P               | 3    | 10  | 5    |
| 45  | VML21CS134 | Narthana Prasanth       | 3    | 10  | 5    |
| 46  | VML21CS136 | Navendu C               | 3    | 10  | 5    |
| 47  | VML21CS139 | Nived Manoj             | 3    | 10  | 5    |
| 48  | VML21CS142 | P J Joseph              | 3    | 10  | 5    |
| 49  | VML21CS145 | Rithika Reejith         | 3    | 10  | 5    |
| 50  | VML21CS148 | Rohit Philip            | 3    | 10  | 5    |
| 51  | VML21CS151 | Sanjiv R                | 2    | 10  | 5    |
| 52  | VML21CS157 | Seetha Lakshmi K A P    | 2    | 10  | 5    |
| 53  | VML21CS160 | Shawn Rajeev            | 2    | 10  | 5    |
| 54  | VML21CS162 | Shizin Abdul Nasar P    | 2    | 10  | 5    |
| 55  | VML21CS164 | Sivada N Rajeev         | 2    | 10  | 5    |
| 56  | VML21CS167 | Sreelakshmi V V         | 2    | 10  | 5    |
| 57  | VML21CS169 | Sreya Pavanan           | 2    | 10  | 5    |
| 58  | VML21CS172 | Tanvi Prashanth         | 2    | 10  | 5    |
| 59  | VML21CS175 | Treesa Sinta Saji       | 2    | 10  | 5    |
| 60  | VML21CS178 | Vaishnav Valsan         | 2    | 10  | 5    |
| 61  | VML21CS184 | Vyshnav Rajesh          | 2    | 10  | 5    |
| <b>Total Number of students attended</b>          |            |                         | 61   | 61  | 61   |
| <b>Target (45%) Mark</b>                          |            |                         | 1.35 | 4.5 | 2.25 |
| <b>Total Number of students who have achieved</b> |            |                         | 61   | 61  | 61   |
| <b>Attainment percentage</b>                      |            |                         | 100  | 100 | 100  |
| <b>Attainment Level</b>                           |            |                         | 3    | 3   | 3    |
| <b>Total Attainment OF Each section</b>           |            |                         |      | 3   |      |
| <b>Project Attainment</b>                         |            |                         | 3    |     |      |
| <b>Other Assessment</b>                           |            |                         | 0    |     |      |

## CO ATTAINMENT

| Course Outcome | Project Attainment | Quiz | Direct Attainment | Indirect Attainment (Course End Survey) | CO Attainment= Direct(80%) +Indirect (20%) |
|----------------|--------------------|------|-------------------|---|--|
| CO1            | 3                  | 0    | 2.4               | 3                                       | 2.52                                       |
| CO2            | 3                  | 3    | 3                 | 3                                       | 3  |
| CO3            | 3                  | 0    | 2.4               | 3                                       | 2.52                                       |
| CO4            | 3                  | 0    | 2.4               | 3                                       | 2.52                                       |
| CO5            | 3                  | 0    | 2.4               | 3                                       | 2.52                                       |

MANJU M. 

## PO ATTAINMENT

Batch : 2021-2025 CSE A

Year of study: 2022-2023

Name of the Subject with code: ADCS401- OBJECT ORIENTED PROGRAMMING IN PYTHON

Name of the Staff: MANJU M. AND SUHADA C.

| CO   | LEVEL | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO 1 | 2.52  | 3   | 2   | 2   | -   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 2 | 3     | 3   | 2   | 2   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 3 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 4 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 5 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |

| PO       | PO1  | PO2  | PO3  | PO4  | PO5  | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|----------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|
| ATTAINED | 2.62 | 1.74 | 1.74 | 1.01 | 1.34 | -   | -   | -   | -   | -    | -    | 2.62 | -    | -    |

MANJU M. 

VIMAL JYOTHI ENGINEERING COLLEGE  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Batch : 2021-2025 CSE B  
Year of study: 2021-2025

Name of the Subject with code: ADCS401- OBJECT ORIENTED PROGRAMMING IN PYTHON

Name of the Staff: MANU M. AND SUHADA C.

No of students: 60

|     |  |
|-----|--|
| CO1 | Provides a clear knowledge of how to write, test and debug Python programs.              |
| CO2 | Illustrates the use of conditional and iterative statements in Python programs.          |
| CO3 | Understand data structures such as Lists, Tuples, Sets And Dictionaries.                 |
| CO4 | Understand how to develop graphical user interface for solutions using Python libraries. |
| CO5 | Design, build, and deploy Object Oriented Programming applications.                      |

|         | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO 1    | 3   | 2   | 2   | -   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 2    | 3   | 2   | 2   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 3    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 4    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 5    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| AVERAGE | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |

Attainment Level Attainment score given, when  
 Attainment Level 1 50 % of students score more than 45%  
 Attainment Level 2 60 % of students score more than 45%  
 Attainment Level 3 70 % of students score more than 45%

**CO 1**

| SL. No. | Register No. | Name of the student  | Project Design  |
|---------|--------------|----------------------|---|
|         |              |                      | Provides a clear knowledge of how to write, test and debug Python programs. |
|         |              | <b>Max Mark</b>      | <b>3</b>  |
| 1       | VML21CS002   | AAKIF ALTHAF         | 3   |
| 2       | VML21CS004   | ABHIJITH A           | 3   |
| 3       | VML21CS007   | ABHIJITH T           | 3   |
| 4       | VML21CS012   | ABHINAV P P          | 3   |
| 5       | VML21CS016   | ABHISHEK K V         | 3   |
| 6       | VML21CS019   | ADARSH JOHNSON       | 3   |
| 7       | VML21CS020   | ADHARV S KUMAR       | 3   |
| 8       | VML21CS022   | ADITHYA PRAKASH      | 3   |
| 9       | VML21CS025   | AJAY M               | 3   |
| 10      | VML21CS028   | AKHIL C J            | 3   |
| 11      | VML21CS031   | AKSHAY VIJAYAN       | 3   |
| 12      | VML21CS032   | ALAN JOSEPH NORBERT  | 3   |
| 13      | VML21CS035   | ALBIN PHILIP         | 3   |
| 14      | VML21CS036   | ALEENA N             | 3   |
| 15      | VML21CS041   | ALFIN SHAJI          | 3   |
| 16      | VML21CS045   | AMAL JERRY           | 3   |
| 17      | VML21CS048   | AMAL T               | 3   |
| 18      | VML21CS051   | ANAGHA NAGESH        | 3   |
| 19      | VML21CS052   | ANANDHU K P          | 3   |
| 20      | VML21CS057   | ANNA MARIA           | 3   |
| 21      | VML21CS060   | ANUGRAHA VV          | 3   |
| 22      | VML21CS066   | ARJUN NV             | 3   |
| 23      | VML21CS069   | ARUN THOMAS          | 3   |
| 24      | VML21CS072   | ASHISH JOSEPH        | 3   |
| 25      | VML21CS077   | AVANTHIKA KAKKADAN   | 3   |
| 26      | VML21CS080   | BASIL BENNY          | 3   |
| 27      | VML21CS083   | DEEPIKA P            | 3   |
| 28      | VML21CS086   | DONA XAVIER          | 3   |
| 29      | VML21CS089   | GAYATHRI KRISHNA K V | 3   |
| 30      | VML21CS092   | GODWIN PAUL          | 3   |
| 31      | VML21CS095   | HANA NOUFAL          | 3   |
| 32      | VML21CS101   | JERIN K SAJU         | 3   |
| 33      | VML21CS104   | JEWEL DENCIL         | 3   |
| 34      | VML21CS105   | JIKSON JIMMY         | 3   |
| 35      | VML21CS107   | JOEL MATHEW SIBY     | 3   |
| 36      | VML21CS110   | JUSTIN JAMES THOMAS  | 3   |
| 37      | VML21CS112   | KAMAL SURESH         | 3   |
| 38      | VML21CS114   | KARTHIK P            | 3   |
| 39      | VML21CS115   | KEERTHANA K          | 3   |
| 40      | VML21CS119   | M AKASH              | 3   |
| 41      | VML21CS121   | MINHAJ AHAMMED T K   | 3   |

|   |             |                   |      |
|---|-------------|-------------------|------|
| 42  | VML21CS127  | MUHAMMED SHABAS   | 3    |
| 43  | VML21CS132  | NANDANA SAJI      | 3    |
| -4  | VML21CS133  | NANDANA T         | 3    |
| 45  | VML21CS135  | NATHASHA ADARSH   | 3    |
| 46  | VML21CS138  | NIVEDH DINESH     | 3    |
| 47  | VML21CS140  | NIVED O           | 3    |
| 48  | VML21CS143  | RAJALAKSHMI S     | 3    |
| 49  | VML21CS149  | SAFWAN V P        | 3    |
| 50  | VML21CS152  | SANTHI PRIYA      | 3    |
| 51  | VML21CS155  | SAYANTH SANTHOSH  | 3    |
| 52  | VML21CS158  | SHARON DAWSON     | 3    |
| 53  | VML21CS165  | SKILL C H         | 3    |
| 54  | VML21CS170  | SREYA SREEDHAR    | 3    |
| 55  | VML21CS173  | THARUN K C        | 3    |
| 56  | VML21CS179  | VISHAKH SATHEESH  | 3    |
| 57  | VML21CS182  | VISHNU PRIYA A P  | 3    |
| 58  | SNC21CS026  | HRIDWETHA CHITRAN | 3    |
| 59  | SIT21CS022  | HRITHIKA PRADEEP  | 3    |
| 60  | LVML21CS185 | NIVED K SURENDRAN | 3    |
| <b>Total Number of students attended</b>                          |             |                   | 60   |
| <b>Target (45%) Mark</b>  |             |                   | 1.35 |
| <b>Total Number of students who have achieved Target ( 45 % )</b> |             |                   | 60   |
| <b>Attainment percentage</b>                                      |             |                   | 100  |
| <b>Attainment Level</b>   |             |                   | 3    |
| <b>Total Attainment OF Each section</b>                           |             |                   | 3    |
| <b>Project Attainment</b>   |             |                   | 3    |
| <b>Other Assessment</b>   |             |                   | 0    |

**CO 2**

| SL. No. | Register No. | Name of the student  | <b>Project Design</b>  | <b>QUIZ</b> |
|---------|--------------|----------------------|--|-------------|
|         |              |                      | Illustrates the use of conditional<br>(if, if-else and if-elif-els ·) and<br>iterative (while and for)<br>statements in Python programs. |             |
|         |              | <b>Max Mark</b>      | 3  | 10          |
| 1       | VML21CS002   | AAKIF ALTHAF         | 3  | 9           |
| 2       | VML21CS004   | ABHIJITH A           | 3  | -           |
| 3       | VML21CS007   | ABHIJITH T           | 3  | -           |
| 4       | VML21CS012   | ABHINAV P P          | 3  | -           |
| 5       | VML21CS016   | ABHISHEK K V         | 3  | 7           |
| 6       | VML21CS019   | ADARSH JOHNSON       | 3  | -           |
| 7       | VML21CS020   | ADHARV S KUMAR       | 3  | 5           |
| 8       | VML21CS022   | ADITHYA PRAKASH      | 3  | -           |
| 9       | VML21CS025   | AJAY M               | 3  | -           |
| 10      | VML21CS028   | AKHIL C J            | 3  | 4           |
| 11      | VML21CS031   | AKSHAY VIJAYAN       | 3  | 4           |
| 12      | VML21CS032   | ALAN JOSEPH NORBERT  | 3  | -           |
| 13      | VML21CS035   | ALBIN PHILIP         | 3  | -           |
| 14      | VML21CS036   | ALEENA N             | 3  | -           |
| 15      | VML21CS041   | ALFIN SHAJI          | 3  | 6           |
| 16      | VML21CS045   | AMAL JERRY           | 3  | 8           |
| 17      | VML21CS048   | AMAL T               | 3  | -           |
| 18      | VML21CS051   | ANAGHA NAGESH        | 3  | -           |
| 19      | VML21CS052   | ANANDHU K P          | 3  | 7           |
| 20      | VML21CS057   | ANNA MARIA           | 3  | 4           |
| 21      | VML21CS060   | ANUGRAHA VV          | 3  | -           |
| 22      | VML21CS066   | ARJUN NV             | 3  | -           |
| 23      | VML21CS069   | ARUN THOMAS          | 3  | -           |
| 24      | VML21CS072   | ASHISH JOSEPH        | 3  | 5           |
| 25      | VML21CS077   | AVANTHIKA KAKKADAN   | 3  | 6           |
| 26      | VML21CS080   | BASIL BENNY          | 3  | -           |
| 27      | VML21CS083   | DEEPIKA P            | 3  | 6           |
| 28      | VML21CS086   | DONA XAVIER          | 3  | 6           |
| 29      | VML21CS089   | GAYATHRI KRISHNA K V | 3  | -           |
| 30      | VML21CS092   | GODWIN PAUL          | 3  | 7           |
| 31      | VML21CS095   | HANA NOUFAL          | 3  | 7           |
| 32      | VML21CS101   | JERIN K SAJU         | 3  | 7           |
| 33      | VML21CS104   | JEWEL DENCIL         | 3  | -           |
| 34      | VML21CS105   | JIKSON JIMMY         | 3  | 6           |
| 35      | VML21CS107   | JOEL MATHEW SIBY     | 3  | 7           |
| 36      | VML21CS110   | JUSTIN JAMES THOMAS  | 3  | 7           |
| 37      | VML21CS112   | KAMAL SURESH         | 3  | -           |
| 38      | VML21CS114   | KARTHIK P            | 3  | -           |
| 39      | VML21CS115   | KEERTHANA K          | 3  | 5           |
| 40      | VML21CS119   | M AKASH              | 3  | 5           |
| 41      | VML21CS121   | MINHAJ AHAMMED T K   | 3  | 7           |

|   |             |                   |      |        |
|---|-------------|-------------------|------|--------|
| 42  | VML21CS127  | MUHAMMED SHABAS   | 3    | 8      |
| 43  | VML21CS132  | NANDANA SAJI      | 3    | 6      |
| 44  | VML21CS133  | NANDANA T         | 3    | 4      |
| 45  | VML21CS135  | NATHASHA ADARSH   | 3    | -      |
| 46  | VML21CS138  | NIVEDH DINESH     | 3    | -      |
| 47  | VML21CS140  | NIVED O           | 3    | 6      |
| 48  | VML21CS143  | RAJALAKSHMI S     | 3    | 8      |
| 49  | VML21CS149  | SAFWAN V P        | 3    | 7      |
| 50  | VML21CS152  | SANTHI PRIYA      | 3    | 4      |
| 51  | VML21CS155  | SAYANTH SANTHOSH  | 3    | -      |
| 52  | VML21CS158  | SHARON DAWSON     | 3    | -      |
| 53  | VML21CS165  | SKILL C H         | 3    | -      |
| 54  | VML21CS170  | SREYA SREEDHAR    | 3    | -      |
| 55  | VML21CS173  | THARUN K C        | 3    | 7      |
| 56  | VML21CS179  | VISHAKH SATHEESH  | 3    | -      |
| 57  | VML21CS182  | VISHNU PRIYA A P  | 3    | -      |
| 58  | SNC21CS026  | HRIDWETHA CHITRAN | 3    | 6      |
| 59  | SIT21CS022  | HRITHIKA PRADEEP  | 3    | 5      |
| 60  | LVML21CS185 | NIVED K SURENDRAN | 3    | -      |
| <b>Total Number of students attended</b>                        |             |                   | 60   | 32     |
| <b>Target (45%) Mark</b>  |             |                   | 1.35 | 4.5    |
| <b>Total Number of students who have achieved Target ( 45 )</b> |             |                   | 60   | 27     |
| <b>Attainment percentage</b>                                    |             |                   | 100  | 84.375 |
| <b>Attainment Level</b>   |             |                   | 3    | 3      |
| <b>Total Attainment OF Each section</b>                         |             |                   | 3    | 3      |
| <b>Project Attainment</b>                                       |             |                   | 3    |        |
| <b>Other Assessment</b>   |             |                   | 3    |        |

### CO5

| SL.<br>No. | Register No. | Name of the student  | Project Design   | Implementat<br>ion                    | Report   |
|------------|--------------|----------------------|--|---------------------------------------|--|
|            |              |                      | Provides successful implementation of the design using Object Oriented concepts. | Successfully deploys the application. | Includes project objective, project design and implementation, results and analysis, conclusion and future work, and references. |
| 1          | VML21CS002   | AAKIF ALTHAF         | 3  | 10                                    | 3  |
| 2          | VML21CS004   | ABHIJITH A           | 3  | 10                                    | 3  |
| 3          | VML21CS007   | ABHIJITH T           | 3  | 10                                    | 3  |
| 4          | VML21CS012   | ABHINAV P P          | 3  | 10                                    | 3  |
| 5          | VML21CS016   | ABHISHEK K V         | 3  | 10                                    | 3  |
| 6          | VML21CS019   | ADARSH JOHNSON       | 3  | 10                                    | 3  |
| 7          | VML21CS020   | ADHARV S KUMAR       | 3  | 10                                    | 3  |
| 8          | VML21CS022   | ADITHYA PRAKASH      | 3  | 10                                    | 3  |
| 9          | VML21CS025   | AJAY M               | 3  | 10                                    | 3  |
| 10         | VML21CS028   | AKHIL C J            | 3  | 10                                    | 3  |
| 11         | VML21CS031   | AKSHAY VIJAYAN       | 3  | 10                                    | 3  |
| 12         | VML21CS032   | ALAN JOSEPH NORBERT  | 3  | 10                                    | 3  |
| 13         | VML21CS035   | ALBIN PHILIP         | 3  | 10                                    | 3  |
| 14         | VML21CS036   | ALEENA N             | 3  | 10                                    | 3  |
| 15         | VML21CS041   | ALFIN SHAJI          | 3  | 10                                    | 3  |
| 16         | VML21CS045   | AMAL JERRY           | 3  | 10                                    | 3  |
| 17         | VML21CS048   | AMAL T               | 3  | 10                                    | 3  |
| 18         | VML21CS051   | ANAGHA NAGESH        | 3  | 10                                    | 3  |
| 19         | VML21CS052   | ANANDHU K P          | 3  | 10                                    | 3  |
| 20         | VML21CS057   | ANNA MARIA           | 3  | 10                                    | 3  |
| 21         | VML21CS060   | ANUGRAHA VV          | 3  | 10                                    | 3  |
| 22         | VML21CS066   | ARJUN NV             | 3  | 10                                    | 3  |
| 23         | VML21CS069   | ARUN THOMAS          | 3  | 10                                    | 3  |
| 24         | VML21CS072   | ASHISH JOSEPH        | 3  | 10                                    | 3  |
| 25         | VML21CS077   | AVANTHIKA KAKKADAN   | 3  | 10                                    | 3  |
| 26         | VML21CS080   | BASIL BENNY          | 3  | 10                                    | 3  |
| 27         | VML21CS083   | DEEPIKA P            | 3  | 10                                    | 3  |
| 28         | VML21CS086   | DONA XAVIER          | 3  | 10                                    | 3  |
| 29         | VML21CS089   | GAYATHRI KRISHNA K V | 3  | 10                                    | 3  |
| 30         | VML21CS092   | GODWIN PAUL          | 3  | 10                                    | 3  |
| 31         | VML21CS095   | HANA NOUFAL          | 3  | 10                                    | 3  |
| 32         | VML21CS101   | JERIN K SAJU         | 3  | 10                                    | 3  |
| 33         | VML21CS104   | JEWEL DENCIL         | 3  | 10                                    | 3  |
| 34         | VML21CS105   | JIKSON JIMMY         | 3  | 10                                    | 3  |
| 35         | VML21CS107   | JOEL MATHEW SIBY     | 3  | 10                                    | 3  |

|   |             |                     |     |      |   |
|---|-------------|---------------------|-----|------|---|
| 36  | VML21CS110  | JUSTIN JAMES THOMAS | 3   | 10   | 3 |
| 37  | VML21CS112  | KAMAL SURESH        | 3   | 10   | 3 |
| 38  | VML21CS114  | KARTHIK P           | 3   | 10   | 3 |
| 39  | VML21CS115  | KEERTHANA K         | 3   | 10   | 3 |
| 40  | VML21CS119  | M AKASH             | 3   | 10   | 3 |
| 41  | VML21CS121  | MINHAJ AHAMMED T K  | 3   | 10   | 3 |
| 42  | VML21CS127  | MUHAMMED SHABAS     | 3   | 10   | 3 |
| 43  | VML21CS132  | NANDANA SAJI        | 3   | 10   | 3 |
| 44  | VML21CS133  | NANDANA T           | 3   | 10   | 3 |
| 45  | VML21CS135  | NATHASHA ADARSH     | 3   | 10   | 3 |
| 46  | VML21CS138  | NIVEDH DINESH       | 3   | 10   | 3 |
| 47  | VML21CS140  | NIVED O             | 3   | 10   | 3 |
| 48  | VML21CS143  | RAJALAKSHMI S       | 3   | 10   | 3 |
| 49  | VML21CS149  | SAFWAN V P          | 3   | 10   | 3 |
| 50  | VML21CS152  | SANTHI PRIYA        | 3   | 10   | 3 |
| 51  | VML21CS155  | SAYANTH SANTHOSH    | 2   | 10   | 3 |
| 52  | VML21CS158  | SHARON DAWSON       | 2   | 10   | 3 |
| 53  | VML21CS165  | SKILL C H           | 2   | 10   | 3 |
| 54  | V VL21CS170 | SREYA SREEDHAR      | 2   | 10   | 3 |
| 55  | VML21CS173  | THARUN K C          | 2   | 10   | 3 |
| 56  | VML21CS179  | VISHAKH SATHEESH    | 2   | 10   | 3 |
| 57  | VML21CS182  | VISHNU PRIYA A P    | 2   | 10   | 3 |
| 58  | SNC21CS026  | HRIDWETHA CHITRAN   | 2   | 10   | 3 |
| 59  | SIT21CS022  | HRITHIKA PRADEEP    | 2   | 10   | 3 |
| 60  | LVML21CS185 | NIVED K SURENDRAN   | 2   | 10   | 3 |
| <b>Total Number of students attended</b>          |             | 60                  | 60  | 60   |   |
| <b>Target (45%) Mark</b>                          |             | 1.35                | 4.5 | 1.35 |   |
| <b>Total Number of students who have achieved</b> |             | 60                  | 60  | 60   |   |
| <b>Attainment percentage</b>                      |             | 100                 | 100 | 100  |   |
| <b>Attainment Level</b>                           |             | 3                   | 3   | 3    |   |
| <b>Total Attainment OF Each section</b>           |             | 3                   |     |      |   |
| <b>Project Attainment</b>                         |             | 3                   |     |      |   |
| <b>Other Assessment</b>                           |             | 0                   |     |      |   |

**CO ATTAINMENT**

| Course Outcome | Project Attainment | Quiz | Direct Attainment | Indirect Attainment (Course End Survey) | CO Attainment = Direct(80%) + Indirect (20%) |
|----------------|--------------------|------|-------------------|---|--|
| CO1            | 3                  | 0    | 2.4               | 3                                       | 2.52   |
| CO2            | 3                  | 3    | 3                 | 3                                       | 3  |
| CO3            | 3                  | 0    | 2.4               | 3                                       | 2.52   |
| CO4            | 3                  | 0    | 2.4               | 3                                       | 2.52   |
| CO5            | 3                  | 0    | 2.4               | 3                                       | 2.52   |

MANJU M. *Shrestha*

Batch : 2021-2025 CSE B  
Year of study: 2022-2023

Name of the Subject with code: ADCS401- OBJECT ORIENTED PROGRAMMING IN PYTHON  
Name of the Staff: MANJU M. AND SUHADA C.

| CO   | LEVEL | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO 1 | 2.52  | 3   | 2   | 2   | -   | 2   | -   | -   | -   | -   | -    | -    | 3    | -    | -    |
| CO 2 | 3     | 3   | 2   | 2   | -   | -   | -   | -   | -   | -   | -    | -    | 3    | -    | -    |
| CO 3 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | 3    | -    | -    |
| CO 4 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | 3    | -    | -    |
| CO 5 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | 3    | -    | -    |

| PO       | PO1  | PO2  | PO3  | PO4  | PO5  | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|----------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|
| ATTAINED | 2.62 | 1.74 | 1.74 | 1.01 | 1.34 | -   | -   | -   | -   | -    | -    | -    | 2.62 | -    |

MANJU M. 

VIMAL JYOTHI ENGINEERING COLLEGE  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Batch : 2021-2025 CSE C

Year of study: 2021-2025

Name of the Subject with code: ADCS401- OBJECT ORIENTED PROGRAMMING IN PYTHON

Name of the Staff: MANJU M. AND SUHADA C.

No of students: 62

|     |  |
|-----|--|
| CO1 | Provides a clear knowledge of how to write, test and debug Python programs.              |
| CO2 | Illustrates the use of conditional and iterative statements in Python programs.          |
| CO3 | Understand data structures such as Lists, Tuples, Sets And Dictionaries.                 |
| CO4 | Understand how to develop graphical user interface for solutions using Python libraries. |
| CO5 | Design, build, and deploy Object Oriented Programming applications.                      |

|         | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO 1    | 3   | 2   | 2   | -   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 2    | 3   | 2   | 2   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 3    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 4    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 5    | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| AVERAGE | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |

Attainment Level Attainment score given, when

Attainment Level 1 50 % of students score more than 45%

Attainment Level 2 60 % of students score more than 45%

Attainment Level 3 70 % of students score more than 45%

**CO 1**

| <b>SL. No.</b> | <b>Register No.</b> | <b>Name of the student</b> | <b>Project Design</b>   |
|----------------|---------------------|----------------------------|---|
|                |                     |                            | Provides a clear knowledge of how to write, test and debug Python programs. |
|                |                     | <b>Max Mark</b>            | 3   |
| 1              | VML21CS003          | ABHAY KV                   | 3   |
| 2              | VML21CS006          | ABHIJITH E S               | 3   |
| 3              | VML21CS008          | ABHINAV K                  | 3   |
| 4              | VML21CS009          | ABHINAV K                  | 3   |
| 5              | VML21CS011          | ABHINAV P P                | 3   |
| 6              | VML21CS014          | ABHIRAM MANOJ              | 3   |
| 7              | VML21CS017          | ABHISHEK P                 | 3   |
| 8              | VML21CS023          | ADWAITH ASHOKAN            | 3   |
| 9              | VML21CS026          | AKASH E                    | 3   |
| 10             | VML21CS030          | AKSHAY DEVARAJAN           | 3   |
| 11             | VML21CS033          | ALAT JOSEPH                | 3   |
| 12             | VML21CS043          | AMAL BHAGYADAS             | 3   |
| 13             | VML21CS046          | AMAL ROY                   | 3   |
| 14             | VML21CS049          | AMEESHA P JOSEPH           | 3   |
| 15             | VML21CS054          | ANAND SHIVARAM             | 3   |
| 16             | VML21CS055          | ANANDU RAMESH              | 3   |
| 17             | VML21CS058          | ANSIYA K P                 | 3   |
| 18             | VML21CS059          | ANTO JOSEPH                | 3   |
| 19             | VML21CS061          | ANUSREE K                  | 3   |
| 20             | VML21CS064          | ARJUN BIJU                 | 3   |
| 21             | VML21CS067          | ARLIN PHILIP SHYJAN        | 3   |
| 22             | VML21CS070          | ASHFAH ASHRAF              | 3   |
| 23             | VML21CS073          | ASWANTH K M                | 3   |
| 24             | VML21CS075          | ATHUL AUGUSTINE            | 3   |
| 25             | VML21CS078          | AVINASH DINESH             | 3   |
| 26             | VML21CS081          | BHARADWAJ N K              | 3   |
| 27             | VML21CS084          | DELIN BENNY                | 3   |
| 28             | VML21CS087          | FAHMI M                    | 3   |
| 29             | VML21CS088          | FOUZAN P                   | 3   |
| 30             | VML21CS090          | GEO M BENNY                | 3   |
| 31             | VML21CS093          | GOUTHAM K LAL              | 3   |
| 32             | VML21CS096          | HARIKRISHNA P.V            | 3   |
| 33             | VML21CS099          | JANAK RAMESH               | 3   |
| 34             | VML21CS102          | JERITT JITHIN              | 3   |
| 35             | VML21CS106          | JOEL MATHEW                | 3   |
| 36             | VML21CS108          | JOSHUA SAJEEV              | 3   |
| 37             | VML21CS111          | JYOTHSI PAUL               | 3   |
| 38             | VML21CS117          | LAKSHMI HARIDASAN          | 3   |
| 39             | VML21CS129          | M V NAVANEETH              | 3   |
| 40             | VML21CS122          | MOHITH PRAKASH             | 3   |
| 41             | VML21CS125          | MUHAMMED RIHAN AC          | 3   |

|   |            |                       |      |
|---|------------|-----------------------|------|
| 42  | VML21CS128 | MUSHARAF MUSTHAF      | 3    |
| 43  | VML21CS131 | NANDANARAJ            | 3    |
| 44  | VML21CS137 | NEHA                  | 3    |
| 45  | VML21CS141 | NIVED SUNIL           | 3    |
| 46  | VML21CS144 | RICHA ROY             | 3    |
| 47  | VML21CS146 | RITHUL K RAJESH       | 3    |
| 48  | VML21CS147 | ROBIN C.B             | 3    |
| 49  | VML21CS150 | SANGEETHA RAMAKRISHNA | 3    |
| 50  | VML21CS153 | SAYANTH KP            | 3    |
| 51  | VML21CS154 | SAYANTH P             | 3    |
| 52  | VML21CS159 | SHARON MK             | 3    |
| 53  | VML21CS161 | SHILPA C              | 3    |
| 54  | VML21CS163 | SHYAMDEV K            | 3    |
| 55  | VML21CS166 | SOORYA NATH M         | 3    |
| 56  | VML21CS168 | SREYA MC              | 3    |
| 57  | VML21CS171 | SWATHI KRISHNA        | 3    |
| 58  | VML21CS174 | TINA THOMAS           | 3    |
| 59  | VML21CS176 | VAIBHAV PRASANNAN     | 3    |
| 60  | VML21CS177 | VAISAKH P             | 3    |
| 61  | VML21CS180 | VISHAL KRISHNA U V P  | 3    |
| 62  | VML21CS183 | VIVEK RAJEEV V        | 3    |
| <b>Total Number of students attended</b>                          |            |                       | 62   |
| <b>Target (45%) Mark</b>  |            |                       | 1.35 |
| <b>Total Number of students who have achieved Target ( 45 % )</b> |            |                       | 62   |
| <b>Attainment percentage</b>                                      |            |                       | 100  |
| <b>Attainment Level</b>   |            |                       | 3    |
| <b>Total Attainment OF Each section</b>                           |            |                       | 3    |
| <b>Project Attainment</b>   |            |                       | 3    |
| <b>Other Assessment</b>   |            |                       | 0    |

**CO 2**

| SL. No. | Register No. | Name of the student | Project Design   | <b>QUIZ</b> |
|---------|--------------|---------------------|--|-------------|
|         |              |                     | Illustrates the use of conditional (if, if-else and if-elif-else) and iterative (while and for) statements in Python programs. |             |
|         |              | <b>Max Mark</b>     | 3  | 10          |
| 1       | VML21CS003   | ABHAY KV            | 3  | 5           |
| 2       | VML21CS006   | ABHIJITH E S        | 3  | -           |
| 3       | VML21CS008   | ABHINAV K           | 3  | 6           |
| 4       | VML21CS009   | ABHINAV K           | 3  | 5           |
| 5       | VML21CS011   | ABHINAV P P         | 3  | 7           |
| 6       | VML21CS014   | ABHIRAM MANOJ       | 3  | 6           |
| 7       | VML21CS017   | ABHISHEK P          | 3  | 5           |
| 8       | VML21CS023   | ADWAITH ASHOKAN     | 3  | 5           |
| 9       | VML21CS026   | AKASH E             | 3  | -           |
| 10      | VML21CS030   | AKSHAY DEVARAJAN    | 3  | -           |
| 11      | VML21CS033   | ALAT JOSEPH         | 3  | 5           |
| 12      | VML21CS043   | AMAL BHAGYADAS      | 3  | 6           |
| 13      | VML21CS046   | AMAL ROY            | 3  | 7           |
| 14      | VML21CS049   | AMEESHA P JOSEPH    | 3  | 5           |
| 15      | VML21CS054   | ANAND SHIVARAM      | 3  | 6           |
| 16      | VML21CS055   | ANANDU RAMESH       | 3  | 6           |
| 17      | VML21CS058   | ANSIYA K P          | 3  | 4           |
| 18      | VML21CS059   | ANTO JOSEPH         | 3  | 5           |
| 19      | VML21CS061   | ANUSREE K           | 3  | 5           |
| 20      | VML21CS064   | ARJUN BIJU          | 3  | 4           |
| 21      | VML21CS067   | ARLIN PHILIP SHYJAN | 3  | 8           |
| 22      | VML21CS070   | ASHFAH ASHRAF       | 3  | 5           |
| 23      | VML21CS073   | ASWANTH K M         | 3  | 7           |
| 24      | VML21CS075   | ATHUL AUGUSTINE     | 3  | -           |
| 25      | VML21CS078   | AVINASH DINESH      | 3  | -           |
| 26      | VML21CS081   | BHARADWAJ N K       | 3  | 7           |
| 27      | VML21CS084   | DELIN BENNY         | 3  | -           |
| 28      | VML21CS087   | FAHMI M             | 3  | 8           |
| 29      | VML21CS088   | FOUZAN P            | 3  | -           |
| 30      | VML21CS090   | GEO M BENNY         | 3  | -           |
| 31      | VML21CS093   | GOUTHAM K LAL       | 3  | -           |
| 32      | VML21CS096   | HARIKRISHNA P.V     | 3  | -           |
| 33      | VML21CS099   | JANAK RAMESH        | 3  | 7           |
| 34      | VML21CS102   | JERITT JITHIN       | 3  | -           |
| 35      | VML21CS106   | JOEL MATHEW         | 3  | -           |
| 36      | VML21CS108   | JOSHUA SAJEEV       | 3  | 6           |
| 37      | VML21CS111   | JYOTHS PAUL         | 3  | 6           |
| 38      | VML21CS117   | LAKSHMI HARIDASAN   | 3  | 6           |
| 39      | VML21CS129   | M V NAVANEETH       | 3  | 7           |
| 40      | VML21CS122   | MOHITH PRAKASH      | 3  | 5           |

|   |            |                      |             |   |
|---|------------|----------------------|-------------|---|
| 41  | VML21CS125 | MUHAMMED RIHAN AC    | 3           | - |
| 42  | VML21CS128 | MUSHARAF MUSTHAFA    | 3           | - |
| 43  | VML21CS131 | NANDANARAJ           | 3           | 5 |
| 44  | VML21CS137 | NEHA                 | 3           | 5 |
| 45  | VML21CS141 | NIVED SUNIL          | 3           | 5 |
| 46  | VML21CS144 | RICHA ROY            | 3           | 8 |
| 47  | VML21CS146 | RITHUL K RAJESH      | 3           | 6 |
| 48  | VML21CS147 | ROBIN C.B            | 3           | 5 |
| 49  | VML21CS150 | SANGEETHA RAMAKRIS   | 3           | 7 |
| 50  | VML21CS153 | SAYANTH KP           | 3           | 8 |
| 51  | VML21CS154 | SAYANTH P            | 3           | 5 |
| 52  | VML21CS159 | SHARON MK            | 3           | 6 |
| 53  | VML21CS161 | SHILPA C             | 3           | 5 |
| 54  | VML21CS163 | SHYAMDEV K           | 3           | 5 |
| 55  | VML21CS166 | SOORYA NATH M        | 3           | 7 |
| 56  | VML21CS168 | SREYA MC             | 3           | 7 |
| 57  | VML21CS171 | SWATHI KRISHNA       | 3           | 3 |
| 58  | VML21CS174 | TINA THOMAS          | 3           | 6 |
| 59  | VML21CS176 | VAIBHAV PRASANNAN    | 3           | - |
| 60  | VML21CS177 | VAISAKH P            | 3           | - |
| 61  | VML21CS180 | VISHAL KRISHNA U V P | 3           | 5 |
| 62  | VML21CS183 | VIVEK RAJEEV V       | 3           | 6 |
| <b>Total Number of students attended</b>                      |            | 62                   | 46          |   |
| <b>Target (45%) Mark</b>                                      |            | 1.35                 | 4.5         |   |
| <b>Total Number of students who have achieved Target ( 45</b> |            | 62                   | 43          |   |
| <b>Attainment percentage</b>                                  |            | 100                  | 93.47826087 |   |
| <b>Attainment Level</b>                                       |            | 3                    | 3           |   |
| <b>Total Attainment OF Each section</b>                       |            | 3                    | 3           |   |
| <b>Project Attainment</b>                                     |            | 3                    |             |   |
| <b>Other Assessment</b>                                       |            | 3                    |             |   |

**CO 3**

| <b>SL. No.</b> | <b>Register No.</b> | <b>Name of the student</b> | <b>Project Design</b>  |
|----------------|---------------------|----------------------------|--|
|                |                     |                            | Provides a clear and accurate description of how to develop programs by utilizing the concepts such as Lists, Tuples, Sets And Dictionaries. |
|                |                     |                            | Max Mark   |
|                |                     |                            | 3  |
| 1              | VML21CS003          | ABHAY KV                   | 3  |
| 2              | VML21CS006          | ABHIJITH E S               | 3  |
| 3              | VML21CS008          | ABHINAV K                  | 3  |
| 4              | VML21CS009          | ABHINAV K                  | 3  |
| 5              | VML21CS011          | ABHINAV P P                | 3  |
| 6              | VML21CS014          | ABHIRAM MANOJ              | 3  |
| 7              | VML21CS017          | ABHISHEK P                 | 3  |
| 8              | VML21CS023          | ADWAITH ASHOKAN            | 3  |
| 9              | VML21CS026          | AKASH E                    | 3  |
| 10             | VML21CS030          | AKSHAY DEVARAJAN           | 3  |
| 11             | VML21CS033          | ALAT JOSEPH                | 3  |
| 12             | VML21CS043          | AMAL BHAGYADAS             | 3  |
| 13             | VML21CS046          | AMAL ROY                   | 3  |
| 14             | VML21CS049          | AMEEsha P JOSEPH           | 3  |
| 15             | VML21CS054          | ANAND SHIVARAM             | 3  |
| 16             | VML21CS055          | ANANDU RAMESH              | 3  |
| 17             | VML21CS058          | ANSIYA K P                 | 3  |
| 18             | VML21CS059          | ANTO JOSEPH                | 3  |
| 19             | VML21CS061          | ANUSREE K                  | 3  |
| 20             | VML21CS064          | ARJUN BIJU                 | 3  |
| 21             | VML21CS067          | ARLIN PHILIP SHYJAN        | 3  |
| 22             | VML21CS070          | ASHFAH ASHRAF              | 3  |
| 23             | VML21CS073          | ASWANTH K M                | 3  |
| 24             | VML21CS075          | ATHUL AUGUSTINE            | 3  |
| 25             | VML21CS078          | AVINASH DINESH             | 3  |
| 26             | VML21CS081          | BHARADWAJ N K              | 3  |
| 27             | VML21CS084          | DELIN BENNY                | 3  |
| 28             | VML21CS087          | FAHMI M                    | 3  |
| 29             | VML21CS088          | FOUZAN P                   | 3  |
| 30             | VML21CS090          | GEO M BENNY                | 3  |
| 31             | VML21CS093          | GOUTHAM K LAL              | 3  |
| 32             | VML21CS096          | HARIKRISHNA P.V            | 3  |
| 33             | VML21CS099          | JANAK RAMESH               | 3  |
| 34             | VML21CS102          | JERITT JITHIN              | 3  |
| 35             | VML21CS106          | JOEL MATHEW                | 3  |
| 36             | VML21CS108          | JOSHUA SAJEEV              | 3  |
| 37             | VML21CS111          | JYOTHSI PAUL               | 3  |
| 38             | VML21CS117          | LAKSHMI HARIDASAN          | 3  |

|   |            |                       |             |
|---|------------|-----------------------|-------------|
| 39  | VML21CS129 | M V NAVANEETH         | 3           |
| 40  | VML21CS122 | MOHITH PRAKASH        | 3           |
| 41  | VML21CS125 | MUHAMMED RIHAN AC     | 3           |
| 42  | VML21CS128 | MUSHARAF MUSTHAFIA    | 3           |
| 43  | VML21CS131 | NANDANARAJ            | 3           |
| 44  | VML21CS137 | NEHA                  | 3           |
| 45  | VML21CS141 | NIVED SUNIL           | 3           |
| 46  | VML21CS144 | RICHA ROY             | 3           |
| 47  | VML21CS146 | RITHUL K RAJESH       | 3           |
| 48  | VML21CS147 | ROBIN C.B             | 3           |
| 49  | VML21CS150 | SANGEETHA RAMAKRISHNA | 3           |
| 50  | VML21CS153 | SAYANTH KP            | 3           |
| 51  | VML21CS154 | SAYANTH P             | 3           |
| 52  | VML21CS159 | SHARON MK             | 3           |
| 53  | VML21CS161 | SHILPA C              | 3           |
| 54  | VML21CS163 | SHYAMDEV K            | 3           |
| 55  | VML21CS166 | SOORYA NATH M         | 3           |
| 56  | VML21CS168 | SREYA MC              | 3           |
| 57  | VML21CS171 | SWATHI KRISHNA        | 3           |
| 58  | VML21CS174 | TINA THOMAS           | 3           |
| 59  | VML21CS176 | VAIBHAV PRASANNAN     | 3           |
| 60  | VML21CS177 | VAISAKH P             | 3           |
| 61  | VML21CS180 | VISHAL KRISHNA U V P  | 3           |
| 62  | VML21CS183 | VIVEK RAJEEV V        | 3           |
| <b>Total Number of students attended</b>                          |            |                       | <b>62</b>   |
| <b>Target (45%) Mark</b>  |            |                       | <b>1.35</b> |
| <b>Total Number of students who have achieved Target ( 45 % )</b> |            |                       | <b>62</b>   |
| <b>Attainment percentage</b>                                      |            |                       | <b>100</b>  |
| <b>Attainment Level</b>   |            |                       | <b>3</b>    |
| <b>Total Attainment OF Each section</b>                           |            |                       | <b>3</b>    |
| <b>Project Attainment</b>   |            |                       | <b>3</b>    |
| <b>Other Assessment</b>   |            |                       | <b>0</b>    |

**CO 4**

| SL.<br>No. | Register No. | Name of the student | Project Design  | Implementation   |
|------------|--------------|---------------------|---|--|
|            |              |                     | Provides a clear knowledge of how to develop graphical user interface for solutions using Python libraries. | Demonstrates proficiency in using Python and Flask , to develop the object oriented application. |
|            |              | <b>Max Mark</b>     | 3   | 10   |
| 1          | VML21CS003   | ABHAY KV            | 2   | 10   |
| 2          | VML21CS006   | ABHIJITH E S        | 2   | 10   |
| 3          | VML21CS008   | ABHINAV K           | 2   | 10   |
| 4          | VML21CS009   | ABHINAV K           | 2   | 10   |
| 5          | VML21CS011   | ABHINAV P P         | 2   | 10   |
| 6          | VML21CS014   | ABHIRAM MANOJ       | 2   | 10   |
| 7          | VML21CS017   | ABHISHEK P          | 2   | 10   |
| 8          | VML21CS023   | ADWAITH ASHOKAN     | 2   | 10   |
| 9          | VML21CS026   | AKASH E             | 2   | 10   |
| 10         | VML21CS030   | AKSHAY DEVARAJAN    | 2   | 10   |
| 11         | VML21CS033   | ALAT JOSEPH         | 3   | 10   |
| 12         | VML21CS043   | AMAL BHAGYADAS      | 3   | 10   |
| 13         | VML21CS046   | AMAL ROY            | 3   | 10   |
| 14         | VML21CS049   | AMEESHA P JOSEPH    | 3   | 10   |
| 15         | VML21CS054   | ANAND SHIVARAM      | 3   | 10   |
| 16         | VML21CS055   | ANANDU RAMESH       | 3   | 10   |
| 17         | VML21CS058   | ANSIYA K P          | 3   | 10   |
| 18         | VML21CS059   | ANTO JOSEPH         | 3   | 10   |
| 19         | VML21CS061   | ANUSREE K           | 3   | 10   |
| 20         | VML21CS064   | ARJUN BIJU          | 3   | 10   |
| 21         | VML21CS067   | ARLIN PHILIP SHYJAN | 3   | 10   |
| 22         | VML21CS070   | ASHFAH ASHRAF       | 3   | 10   |
| 23         | VML21CS073   | ASWANTH K M         | 3   | 10   |
| 24         | VML21CS075   | ATHUL AUGUSTINE     | 3   | 10   |
| 25         | VML21CS078   | AVINASH DINESH      | 3   | 10   |
| 26         | VML21CS081   | BHARADWAJ N K       | 3   | 10   |
| 27         | VML21CS084   | DELIN BENNY         | 3   | 10   |
| 28         | VML21CS087   | FAHMI M             | 3   | 10   |
| 29         | VML21CS088   | FOUZAN P            | 3   | 10   |
| 30         | VML21CS090   | GEO M BENNY         | 3   | 10   |
| 31         | VML21CS093   | GOUTHAM K LAL       | 3   | 10   |
| 32         | VML21CS096   | HARIKRISHNA P.V     | 3   | 10   |
| 33         | VML21CS099   | JANAK RAMESH        | 3   | 10   |
| 34         | VML21CS102   | JERITT JITHIN       | 3   | 10   |
| 35         | VML21CS106   | JOEL MATHEW         | 3   | 10   |
| 36         | VML21CS108   | JOSHUA SAJEEV       | 3   | 10   |
| 37         | VML21CS111   | JYOTHSI PAUL        | 3   | 10   |
| 38         | VML21CS117   | LAKSHMI HARIDASAN   | 3   | 10   |

|  |            |                    |     |    |
|--|------------|--------------------|-----|----|
| 39   | VML21CS129 | M V NAVANEETH      | 3   | 10 |
| 40   | VML21CS122 | MOHITH PRAKASH     | 3   | 10 |
| 41   | VML21CS125 | MUHAMMED RIHAN A   | 3   | 10 |
| 42   | VML21CS128 | MUSHARAF MUSTHAFA  | 3   | 10 |
| 43   | VML21CS131 | NANDANARAJ         | 3   | 10 |
| 44   | VML21CS137 | NEHA               | 3   | 10 |
| 45   | VML21CS141 | NIVED SUNIL        | 3   | 10 |
| 46   | VML21CS144 | RICHA ROY          | 3   | 10 |
| 47   | VML21CS146 | RITHUL K RAJESH    | 3   | 10 |
| 48   | VML21CS147 | ROBIN C.B          | 3   | 10 |
| 49   | VML21CS150 | SANGEETHA RAMAKR   | 3   | 10 |
| 50   | VML21CS153 | SAYANTH KP         | 3   | 10 |
| 51   | VML21CS154 | SAYANTH P          | 3   | 10 |
| 52   | VML21CS159 | SHARON MK          | 3   | 10 |
| 53   | VML21CS161 | SHILPA C           | 3   | 10 |
| 54   | VML21CS163 | SHYAMDEV K         | 3   | 10 |
| 55   | VML21CS166 | SOORYA NATH M      | 3   | 10 |
| 56   | VML21CS168 | SREYA MC           | 3   | 10 |
| 57   | VML21CS171 | SWATHI KRISHNA     | 3   | 10 |
| 58   | VML21CS174 | TINA THOMAS        | 3   | 10 |
| 59   | VML21CS176 | VAIBHAV PRASANNAN  | 3   | 10 |
| 60   | VML21CS177 | VAISAKH P          | 3   | 10 |
| 61   | VML21CS180 | VISHAL KRISHNA U V | 3   | 10 |
| 62   | VML21CS183 | VIVEK RAJEEV V     | 3   | 10 |
| <b>Total Number of students attended</b>                 |            | 62                 | 62  |    |
| <b>Target (45%) Mark</b>                                 |            | 1.35               | 4.5 |    |
| <b>Total Number of students who have achieved Target</b> |            | 62                 | 62  |    |
| <b>Attainment percentage</b>                             |            | 100                | 100 |    |
| <b>Attainment Level</b>                                  |            | 3                  | 3   |    |
| <b>Total Attainment OF Each section</b>                  |            | 3                  |     |    |
| <b>Project Attainment</b>                                |            | 3                  |     |    |
| <b>Other Assessment</b>                                  |            | 0                  |     |    |

| CO 5            |              |                     |  |                                       |  |
|-----------------|--------------|---------------------|--|---------------------------------------|--|
| SL. No.         | Register No. | Name of the student | Provides successful implementation of the design using Object Oriented concepts. | Successfully deploys the application. | Includes project objective, project design and implementation, results and analysis, conclusion and future work, and references. |
|                 |              |                     | 3  | 10                                    | 3  |
| <b>Max Mark</b> |              |                     | 3  | 10                                    | 3  |
| 1               | VML21CS003   | ABHAY KV            | 2  | 10                                    | 3  |
| 2               | VML21CS006   | ABHIJITH E S        | 2  | 10                                    | 3  |
| 3               | VML21CS008   | ABHINAV K           | 2  | 10                                    | 3  |
| 4               | VML21CS009   | ABHINAV K           | 2  | 10                                    | 3  |
| 5               | VML21CS011   | ABHINAV P P         | 2  | 10                                    | 3  |
| 6               | VML21CS014   | ABHIRAM MANOJ       | 2  | 10                                    | 3  |
| 7               | VML21CS017   | ABHISHEK P          | 2  | 10                                    | 3  |
| 8               | VML21CS023   | ADWAITH ASHOKAN     | 2  | 10                                    | 3  |
| 9               | VML21CS026   | AKASH E             | 2  | 10                                    | 3  |
| 10              | VML21CS030   | AKSHAY DEVARAJAN    | 2  | 10                                    | 3  |
| 11              | VML21CS033   | ALAT JOSEPH         | 2  | 10                                    | 3  |
| 12              | VML21CS043   | AMAL BHAGYADAS      | 2  | 10                                    | 3  |
| 13              | VML21CS046   | AMAL ROY            | 2  | 10                                    | 3  |
| 14              | VML21CS049   | AMEESHA P JOSEPH    | 2  | 10                                    | 3  |
| 15              | VML21CS054   | ANAND SHIVARAM      | 2  | 10                                    | 3  |
| 16              | VML21CS055   | ANANDU RAMESH       | 2  | 10                                    | 3  |
| 17              | VML21CS058   | ANSIYA K P          | 2  | 10                                    | 3  |
| 18              | VML21CS059   | ANTO JOSEPH         | 2  | 10                                    | 3  |
| 19              | VML21CS061   | ANUSREE K           | 2  | 10                                    | 3  |
| 20              | VML21CS064   | ARJUN BIJU          | 2  | 10                                    | 3  |
| 21              | VML21CS067   | ARLIN PHILIP SHYJAN | 3  | 10                                    | 3  |
| 22              | VML21CS070   | ASHFAAH ASHRAF      | 3  | 10                                    | 3  |
| 23              | VML21CS073   | ASWANTH K M         | 3  | 10                                    | 3  |
| 24              | VML21CS075   | ATHUL AUGUSTINE     | 3  | 10                                    | 3  |
| 25              | VML21CS078   | AVINASH DINESH      | 3  | 10                                    | 3  |
| 26              | VML21CS081   | BHARADWAJ N K       | 3  | 10                                    | 3  |
| 27              | VML21CS084   | DELIN BENNY         | 3  | 10                                    | 3  |
| 28              | VML21CS087   | FAHMI M             | 3  | 10                                    | 3  |
| 29              | VML21CS088   | FOUZAN P            | 3  | 10                                    | 3  |
| 30              | VML21CS090   | GEO M BENNY         | 3  | 10                                    | 3  |
| 31              | VML21CS093   | GOUTHAM K LAL       | 3  | 10                                    | 3  |
| 32              | VML21CS096   | HARIKRISHNA P.V     | 3  | 10                                    | 3  |
| 33              | VML21CS099   | JANAK RAMESH        | 3  | 10                                    | 3  |
| 34              | VML21CS102   | JERITT JITHIN       | 3  | 10                                    | 3  |
| 35              | VML21CS106   | JOEL MATHEW         | 3  | 10                                    | 3  |
| 36              | VML21CS108   | JOSHUA SAJEEV       | 3  | 10                                    | 3  |

|   |            |                       |     |      |   |
|---|------------|-----------------------|-----|------|---|
| 37  | VML21CS111 | JYOTHS PAUL           | 3   | 10   | 3 |
| 38  | VML21CS117 | LAKSHMI HARIDASAN     | 3   | 10   | 3 |
| 39  | VML21CS129 | M V NAVANEETH         | 3   | 10   | 3 |
| 40  | VML21CS122 | MOHITH PRAKASH        | 3   | 10   | 3 |
| 41  | VML21CS125 | MUHAMMED RIHAN A      | 3   | 10   | 3 |
| 42  | VML21CS128 | MUSHARAF MUSTHAQ      | 3   | 10   | 3 |
| 43  | VML21CS131 | NANDANARAJ            | 3   | 10   | 3 |
| 44  | VML21CS137 | NEHA                  | 3   | 10   | 3 |
| 45  | VML21CS141 | NIVED SUNIL           | 3   | 10   | 3 |
| 46  | VML21CS144 | RICHA ROY             | 3   | 10   | 3 |
| 47  | VML21CS146 | RITHUL K RAJESH       | 3   | 10   | 3 |
| 48  | VML21CS147 | ROBIN C.B             | 3   | 10   | 3 |
| 49  | VML21CS150 | SANGEETHA RAMAKRISHNA | 3   | 10   | 3 |
| 50  | VML21CS153 | SAYANTH KP            | 3   | 10   | 3 |
| 51  | VML21CS154 | SAYANTH P             | 2   | 10   | 3 |
| 52  | VML21CS159 | SHARON MK             | 2   | 10   | 3 |
| 53  | VML21CS161 | SHILPA C              | 2   | 10   | 3 |
| 54  | VML21CS163 | SHYAMDEV K            | 2   | 10   | 3 |
| 55  | VML21CS166 | SOORYA NATH M         | 2   | 10   | 3 |
| 56  | VML21CS168 | SREYA MC              | 2   | 10   | 3 |
| 57  | VML21CS171 | SWATHI KRISHNA        | 2   | 10   | 3 |
| 58  | VML21CS174 | TINA THOMAS           | 2   | 10   | 3 |
| 59  | VML21CS176 | VAIBHAV PRASANNAN     | 2   | 10   | 3 |
| 60  | VML21CS177 | VAISAKH P             | 2   | 10   | 3 |
| 61  | VML21CS180 | VISHAL KRISHNA U V    | 2   | 10   | 3 |
| 62  | VML21CS183 | VIVEK RAJEEV V        | 2   | 10   | 3 |
| <b>Total Number of students attended</b>          |            | 62                    | 62  | 62   |   |
| <b>Target (45%) Mark</b>                          |            | 1.35                  | 4.5 | 1.35 |   |
| <b>Total Number of students who have achieved</b> |            | 62                    | 62  | 62   |   |
| <b>Attainment percentage</b>                      |            | 100                   | 100 | 100  |   |
| <b>Attainment Level</b>                           |            | 3                     | 3   | 3    |   |
| <b>Total Attainment OF Each section</b>           |            |                       | 3   |      |   |
| <b>Project Attainment</b>                         |            | 3                     |     |      |   |
| <b>Other Assessment</b>                           |            | 0                     |     |      |   |

CO ATTAINMENT

| Course Outcome | Project Attainment | Quiz | Direct Attainment | Indirect Attainment (Course End Survey) | CO Attainment= Direct(80%) + Indirect (20%) |
|----------------|--------------------|------|-------------------|---|---|
| CO1            | 3                  | 0    | 2.4               | 3                                       | 2.52  |
| CO2            | 3                  | 3    | 3                 | 3                                       | 3   |
| CO3            | 3                  | 0    | 2.4               | 3                                       | 2.52  |
| CO4            | 3                  | 0    | 2.4               | 3                                       | 2.52  |
| CO5            | 3                  | 0    | 2.4               | 3                                       | 2.52  |

MANJU M. *[Signature]*

Batch : 2021-2025 CSE C  
Year of study: 2022-2023

Name of the Subject with code: ADCS401-OBJECT ORIENTED PROGRAMMING IN PYTHON  
Name of the Staff: MANJU M. AND SUHADA C.

### PO ATTAINMENT

| CO   | LEVEL | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO 1 | 2.52  | 3   | 2   | 2   | -   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 2 | 3     | 3   | 2   | 2   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 3 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 4 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |
| CO 5 | 2.52  | 3   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -    | -    | -    | 3    | -    |

| PO       | PO1  | PO2  | PO3  | PO4  | PO5  | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|----------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|
| ATTAINED | 2.62 | 1.74 | 1.74 | 1.01 | 1.34 | -   | -   | -   | -   | -    | -    | -    | 2.62 | -    |

MANJU M. 



VIMAL JYOTHI  
ENGINEERING COLLEGE  
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

VALUE ADDED COURSE ON

"OBJECT ORIENTED PROGRAMMING USING PYTHON"

# CERTIFICATE OF PARTICIPATION

THE FOLLOWING AWARD IS GIVEN TO

**AKASH SANTHOSH**

HAS PARTICIPATED VALUE ADDED COURSE PROGRAMME ON "OBJECT ORIENTED PROGRAMMING USING PYTHON" ORGANISED BY THE DEPARTMENT OF COMPUTER SCIENCE ENGINEERING, VIMAL JYOTHI ENGINEERING COLLEGE IN ASSOCIATION WITH PROGRESSUM  
ON 15th to 19th MARCH 2023

---

Convenor  
Miss. Divya B  
H.o.D,CSE

---

Dr.Benny Joseph  
Principal



# VIMAL JYOTHI ENGINEERING COLLEGE

JYOTHI NAGAR, CHEMPERI – 670632, KANNUR D.T., KERALA

An ISO 9001:2008 Certified Institution

## ADCS 401 - OBJECT ORIENTED PROGRAMMING IN PYTHON

### Evaluation Rubrics

Project Design :15 Marks

| No | Parameters   | Mark | Poor      | Fair      | Very Good | Outstanding |
|----|--|------|-----------|-----------|-----------|-------------|
| 1  | Provides a clear knowledge of how to write, test and debug Python programs.<br>[CO 1]  | 3    | (0 Marks) | (1 Marks) | (2 Marks) | (3 Marks)   |
| 2  | Illustrates the use of conditional (if, if-else and if-elif-else) and iterative (while and for) statements in Python programs.<br>[CO 2]               | 3    | (0 Marks) | (1 Marks) | (2 Marks) | (3 Marks)   |
| 3  | Provides a clear and accurate description of how to develop programs by utilizing the concepts such as Lists, Tuples, Sets And Dictionaries.<br>[CO 3] | 3    | (0 Marks) | (1 Marks) | (2 Marks) | (3 Marks)   |



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|   |   |   |           |           |           |           |
|---|---|---|-----------|-----------|-----------|-----------|
| 4 | Provides a clear knowledge of how to develop graphical user interface for solutions using Python libraries.<br><br>[CO 4] | 3 | (0 Marks) | (1 Marks) | (2 Marks) | (3 Marks) |
| 5 | Provides successful implementation of the design using Object Oriented concepts.<br><br>[CO 5]                            | 3 | (0 Marks) | (1 Marks) | (2 Marks) | (3 Marks) |

Implementation : 20 Marks

| No | Parameters  | Mark | Poor          | Fair          | Very Good     | Outstanding |
|----|---|------|---------------|---------------|---------------|-------------|
| 1  | Demonstrates proficiency in using Python and Flask , to develop the object oriented application.<br><br>[CO4] | 10   | (0 – 1 Marks) | (2 – 3 Marks) | (4 Marks)     | (5 Marks)   |
| 2  | Successfully deploys the application.<br><br>[CO 5]   | 10   | (0 – 3 Marks) | (4 – 6 Marks) | (7 - 9 Marks) | (10 Marks)  |



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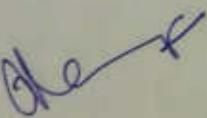
Report : 5 Marks

| No | Parameters  | Mark | Poor          | Fair          | Very Good | Outstanding |
|----|---|------|---------------|---------------|-----------|-------------|
| 1  | The report should include project objective, project design and implementation, results and analysis, conclusion and future work, and references.[CO 5] | 5    | (0 – 1 Marks) | (2 – 3 Marks) | (4 Marks) | (5 Marks)   |

Quiz : 10 Marks

| No | Parameters  | Mark | Poor          | Fair          | Very Good | Outstanding |
|----|---|------|---------------|---------------|-----------|-------------|
| 1  | The quiz should include the basic concepts and data structures in Python. [CO 3]          | 5    | (0 – 1 Marks) | (2 – 3 Marks) | (4 Marks) | (5 Marks)   |
| 2  | The quiz should include Object oriented concepts and graphical user interface. [CO 4 & 5] | 5    | (0 – 1 Marks) | (2 – 3 Marks) | (4 Marks) | (5 Marks)   |

# PROJECT REPORT

A handwritten signature in blue ink, appearing to read "Dent".

**PROJECT NAME - CALCULATOR USING PYTHON**

**BATCH NO - 6**

**CLASS - S4 CSE C**

**MEMBERS:**

- 1- SAYANTH P
- 2- SHARON MK
- 3- SHILPA C
- 4- SHYAMDEV K
- 5- SOORYA NATH M
- 6- SREYA MC
- 7- SWATHI KRISHNA
- 8- TINA THOMAS
- 9- VAIBHAV PRASANNAN
- 10- VAISAKH P
- 11- VISHAL KRISHNA U V P
- 12- VIVEK RAJEEV V

### Introduction:

The purpose of this project is to create a simple calculator using Python programming language. The calculator will be able to perform basic arithmetic operations such as addition, subtraction, multiplication, and division.

### Materials:

Python IDLE or any other Python compiler  
Basic knowledge of Python programming

### Methodology:

Open a new Python file in the IDLE or any other compiler.  
Create a function for each of the four arithmetic operations:  
addition, subtraction, multiplication, and division.  
Inside each function, prompt the user to input two numbers to be calculated.  
Perform the appropriate arithmetic operation using the inputted numbers.  
Print the result to the console using the print() function.  
Create a main function to call each of the four arithmetic functions.  
Inside the main function, prompt the user to select the arithmetic operation they want to perform.  
Based on the user's input, call the appropriate arithmetic function.  
Allow the user to continue using the calculator until they choose to exit.

### Results:

After running the Python code, the calculator will be able to perform basic arithmetic operations. The user will be prompted to input two numbers and select the arithmetic operation they want to perform. The calculator will then display the result of the calculation on the console.

### Conclusion:

In conclusion, this project successfully created a simple calculator using Python programming language. It is a useful tool for performing basic arithmetic operations and can be further developed to include more advanced calculations.

### **PROGRAM:**

```
def add(x, y):
    return x + y
def subtract(x, y):
    return x - y
def multiply(x, y):
    return x * y
def divide(x, y):
    return x / y
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
operator = input("Enter operator (+,-,*,/): ")
if operator == '+':
    print(num1, "+", num2, "=", add(num1, num2))
elif operator == '-':
    print(num1, "-", num2, "=", subtract(num1, num2))
elif operator == '*':
    print(num1, "*", num2, "=", multiply(num1, num2))
elif operator == '/':
    print(num1, "/", num2, "=", divide(num1, num2))
else:
    print("Invalid operator")
```

### **OUTPUT:**

```
Enter first number: 5
Enter second number: 5
Enter operator (+,-,*,/): +
5.0 + 5.0 = 10.0
```

```
Enter first number: 5
Enter second number: 5
Enter operator (+,-,*,/): -
5.0 - 5.0 = 0.0
```

```
Enter first number: 5
Enter second number: 4
Enter operator (+,-,*,/): *
5.0 * 4.0 = 20.0
```

```
Enter first number: 50
Enter second number: 25
Enter operator (+,-,*,/): /
50.0 / 25.0 = 2.0
```

*Alex H*



S4 CSE - A (2021-25) BATCH  
ADD - ON COURSE ATTENDANCE

| Roll Number | Register Number | Name                 | SIGNATURE  |            |            |            |            |
|-------------|-----------------|----------------------|------------|------------|------------|------------|------------|
|             |                 |                      | 15-03-2023 | 16-03-2023 | 17-03-2023 | 18-03-2023 | 19-03-2023 |
| 1           | VML21CS001      | AADITYAN HARINDRAN   |            |            |            |            |            |
| 2           | VML21CS010      | ABHINAV M V          |            |            | —          |            |            |
| 3           | VML21CS013      | Abhiram A            |            |            | —          |            |            |
| 4           | VML21CS015      | Abhiram S Manoj      |            |            | —          |            |            |
| 5           | VML21CS018      | Abin M Jose          |            |            | —          |            |            |
| 6           | VML21CS021      | Adith Narayanan      |            |            | —          |            |            |
| 7           | VML21CS024      | Agney J Purushotham  |            |            |            |            |            |
| 8           | VML21CS027      | Akash Santhosh       |            |            |            |            |            |
| 9           | VML21CS029      | Akhil Mathew George  |            | —          |            | —          | ABSENT     |
| 10          | VML21CS034      | Albert Jose          |            |            |            |            |            |
| 11          | VML21CS037      | Alen Biju            |            |            | —          |            |            |
| 12          | VML21CS038      | Alen Cherian         |            |            |            |            |            |
| 13          | VML21CS039      | Alen Kurian Joseph   |            |            |            |            |            |
| 14          | VML21CS040      | Alen.t.tom           |            |            | —          |            |            |
| 15          | VML21CS042      | Alfi Siby            |            |            | —          |            |            |
| 16          | VML21CS044      | Amal Cs              |            |            |            |            |            |
| 17          | VML21CS047      | Amalroy              |            |            | —          |            |            |
| 18          | VML21CS050      | Amith T.v            |            |            | —          |            |            |
| 19          | VML21CS053      | Anandhu Poyyil       |            |            |            |            |            |
| 20          | VML21CS056      | Ananya Praseed Kumar |            |            |            |            |            |
| 21          | VML21CS062      | Aparna Bhaskar       |            |            |            |            |            |
| 22          | VML21CS063      | Arjun. Av            |            |            | —          |            |            |
| 23          | VML21CS065      | Arjun.madathil       |            |            |            |            |            |
| 24          | VML21CS068      | Armond Jose          |            |            |            |            |            |
| 25          | VML21CS071      | Ashik Jhonson        |            |            |            |            |            |

|    |            |                         |                 |                 |                 |        |   |
|----|------------|-------------------------|-----------------|-----------------|-----------------|--------|---|
| 26 | VML21CS074 | Aswin Udayan            | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 27 | VML21CS076 | Athul Joy               | <del>Att.</del> | Att.            | —               | ABSENT | — |
| 28 | VML21CS079 | Azzah Waheed            | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 29 | VML21CS082 | Darvin Sibi             | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 30 | VML21CS085 | Ihanus Joy              | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 31 | VML21CS091 | Gerald Siriac           | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 32 | VML21CS094 | Goutham S Prasad        | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 33 | VML21CS097 | Hooriyya Binth Khalid   | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 34 | VML21CS098 | Iagath K                | <del>Att.</del> | —               | —               | ABSENT | — |
| 35 | VML21CS100 | Jeffin Jiju             | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 36 | VML21CS103 | Jestin K S              | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 37 | VML21CS11  | Koyal M Joseph          | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 38 | VML21CS113 | Karthika K P            | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 39 | VML21CS118 | K K Krishnanjana Deepak | <del>Att.</del> | —               | —               | ABSENT | — |
| 40 | VML21CS119 | Kithin Krishnan         | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 41 | VML21CS121 | Lanasa N                | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 42 | VML21CS122 | Mridula P T             | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 43 | VML21CS123 | Mohammed Sabeeh C K     | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 44 | VML21CS124 | Nandha A P              | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 45 | VML21CS125 | Parthana Prasanth       | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 46 | VML21CS126 | Pavendu C               | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 47 | VM         | Rajesh Manoj            | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 48 | VM         | R Joseph                | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 49 | VM         | Rithika Reejith         | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 50 | VM         | Rit Philip              | <del>Att.</del> | —               | —               | ABSENT | — |
| 51 | VM         | Rajiv R                 | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 52 | VM         | Ratha Lakshmi K A P     | <del>Att.</del> | <del>Att.</del> | <del>Att.</del> | ✓      | ✓ |
| 53 | VI         | Rawn Rajeev             | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |
| 54 | VI         | Ran Abdul Nasar P       | <del>Att.</del> | <del>Att.</del> | —               | ✓      | ✓ |

|    |    |     |                |                |                |                |        |   |
|----|----|-----|----------------|----------------|----------------|----------------|--------|---|
| 55 | VM | 164 | Aeda N Rajeev  | <i>Rajeev</i>  | <i>Rajeev</i>  | <i>Rajeev</i>  | ✓      | ✓ |
| 56 | VM |     | elakshmi V V   | <i>Sai</i>     | <i>Sai</i>     | —              | ✓      | ✓ |
| 57 | VM |     | nya Pavanam    | —              | —              | <i>Pavanam</i> | ABSENT | — |
| 58 | VM | 172 | Anvi Prashanth | <i>Anvi</i>    | <i>Anvi</i>    | <i>Anvi</i>    | ✓      | ✓ |
| 59 | VM |     | esa Sinta Saji | <i>Sinta</i>   | <i>Sinta</i>   | —              | ✓      | ✓ |
| 60 | VM |     | shnav Valsan   | <i>X Shnav</i> | <i>X Shnav</i> | —              | ✓      | ✓ |
| 61 | VM |     | hnnav Rajesh   | <i>Rajesh</i>  | <i>Rajesh</i>  | —              | ✓      | ✓ |

MANJU M. *Manju M.*



**S4 CSE B Student Details (2021-2025 BATCH)**

**ADD-ON COURSE ATTENDANCE**

| S.No. | University Reg.No | STUDENT NAME        | SIGNATURE  |            |            |            |            |
|-------|-------------------|---------------------|------------|------------|------------|------------|------------|
|       |                   |                     | 15-03-2023 | 16-03-2023 | 17-03-2023 | 18-03-2023 | 19-03-2023 |
| 1     | VML21CS002        | AAKIF ALTHAF        |            |            |            | ✓          | ✓          |
| 2     | VML21CS004        | ABHIJITH A          |            |            | ←          | ✓          | ✓          |
| 3     | VML21CS007        | ABHIJITH T          |            | —          | ABSEN      | —          | —          |
| 4     | VML21CS012        | ABHINAV P P         |            | —          | ABSEN      | ✓          | ✓          |
| 5     | VML21CS016        | ABHISHEK K V        |            |            |            | ✓          | ✓          |
| 6     | VML21CS019        | ADARSH JOHNSON      |            |            | ABSEN      | ✓          | ✓          |
| 7     | VML21CS020        | ADHARV S KUMAR      |            |            |            | ✓          | ✓          |
| 8     | VML21CS022        | ADITHYA PRAKASH     |            |            | —          | ✓          | ✓          |
| 9     | VML21CS025        | AJAY M              |            |            |            | ✓          | ✓          |
| 10    | VML21CS028        | AKHIL C J           |            |            |            | ✓          | ✓          |
| 11    | VML21CS031        | AKSHAY VIJAYAN      |            |            |            | ✓          | ✓          |
| 12    | VML21CS032        | ALAN JOSEPH NORBERT |            |            | ABSEN      | ✓          | ✓          |
| 13    | VML21CS035        | ALBIN PHILIP        |            |            |            | ✓          | ✓          |
| 14    | VML21CS036        | ALEENA N            |            |            | —          | ✓          | ✓          |
| 15    | VML21CS041        | ALFIN SHAJI         |            |            |            | ✓          | ✓          |
| 16    | VML21CS045        | AMAL JERRY          |            |            | —          | ✓          | ✓          |
| 17    | VML21CS048        | AMAL T              |            | —          | —          |            |            |
| 18    | VML21CS051        | ANAGHA NAGESH       |            |            | —          | ✓          | ✓          |
| 19    | VML21CS052        | ANANDHU K P         |            |            |            | ✓          | ✓          |
| 20    | VML21CS057        | ANNA MARIA          |            |            | —          | ✓          | ✓          |

|    |            |                      |              |              |              |   |   |
|----|------------|----------------------|--------------|--------------|--------------|---|---|
| 21 | VML21CS060 | ANUGRAHA VV          | <del>✓</del> | <del>✓</del> | —            | ✓ | ✓ |
| 22 | VML21CS066 | ARJUN NV             | <del>✓</del> | —            | Absent       | — | — |
| 23 | VML21CS069 | ARUN THOMAS          | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 24 | VML21CS072 | ASHISH JOSEPH        | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 25 | VML21CS077 | AVANTHIKA KAKKADAN   | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 26 | VML21CS080 | BASIL BENNY          | <del>✓</del> | <del>✓</del> | —            | ✓ | ✓ |
| 27 | VML21CS083 | DEEPIKA P            | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 28 | VML21CS086 | DONA XAVIER          | <del>✓</del> | <del>✓</del> | —            | ✓ | ✓ |
| 29 | VML21CS089 | GAYATHRI KRISHNA K V | <del>✓</del> | —            | Absent       | — | — |
| 30 | VML21CS092 | GODWIN PAUL          | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 31 | VML21CS095 | HANA NOUFAL          | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 32 | VML21CS101 | JERIN K SAJU         | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 33 | VML21CS104 | JEWEL DENCIL         | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 34 | VML21CS105 | JIKSON JIMMY         | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 35 | VML21CS107 | JOEL MATHEW SIBY     | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 36 | VML21CS110 | JUSTIN JAMES THOMAS  | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 37 | VML21CS112 | KAMAL SURESH         | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 38 | VML21CS114 | KARTHIK P            | <del>✓</del> | <del>✓</del> | —            | ✓ | ✓ |
| 39 | VML21CS115 | KEERTHANA K          | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 40 | VML21CS119 | M AKASH              | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 41 | VML21CS121 | MINHAJ AHAMMED T K   | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 42 | VML21CS127 | MUHAMMED SHABAS      | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 43 | VML21CS132 | NANDANA SAJI         | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 44 | VML21CS133 | NANDANA T            | <del>✓</del> | <del>✓</del> | <del>✓</del> | ✓ | ✓ |
| 45 | VML21CS135 | NATHASHA ADARSH      | <del>✓</del> | <del>✓</del> | —            | ✓ | ✓ |

|    |             |                   |                        |                        |                        |        |   |
|----|-------------|-------------------|------------------------|------------------------|------------------------|--------|---|
| 46 | VML21CS138  | NIVEDH DINESH     | <u>Nivedh</u>          | <u>Nivedh</u>          | —                      | ✓      | ✓ |
| 47 | VML21CS140  | NIVED O           | <del>O</del>           | <del>O</del>           | <del>O</del>           | ✓      | ✓ |
| 48 | VML21CS143  | RAJALAKSHMI S     | <del>Rajalakshmi</del> | <del>Rajalakshmi</del> | <del>Rajalakshmi</del> | ✓      | ✓ |
| 49 | VML21CS149  | SAFWAN V P        | <del>Safwan</del>      | <del>Safwan</del>      | <del>Safwan</del>      | ✓      | ✓ |
| 50 | VML21CS152  | SANTHI PRIYA      | <del>Santhi</del>      | <del>Santhi</del>      | <del>Santhi</del>      | ✓      | ✓ |
| 51 | VML21CS155  | SAYANTH SANTHOSH  | <del>Sayanth</del>     | <del>Sayanth</del>     | —                      | ✓      | ✓ |
| 52 | VML21CS158  | SHARON DAWSON     | <del>Sharon</del>      | <del>Sharon</del>      | —                      | ✓      | ✓ |
| 53 | VML21CS165  | SKILL C H         | <del>skill</del>       | —                      | —                      | ABSENT | — |
| 54 | VML21CS170  | SREYA SREEDHAR    | <del>Sreya</del>       | —                      | —                      | ABSENT | — |
| 55 | VML21CS173  | THARUN K C        | <del>Tharun</del>      | <del>Tharun</del>      | <del>Tharun</del>      | ✓      | ✓ |
| 56 | VML21CS179  | VISHAKH SATHEESH  | <del>Vishakh</del>     | <del>Vishakh</del>     | —                      | ✓      | ✓ |
| 57 | VML21CS182  | VISHNU PRIYA A P  | —                      | —                      | ABSENT                 | —      | — |
| 58 | SNC21CS026  | HRIDWETHA CHITRAN | <del>Hridwetha</del>   | <del>Hridwetha</del>   | <del>Hridwetha</del>   | ✓      | ✓ |
| 59 | SIT21CS022  | HRITHIKA PRADEEP  | <del>hrithika</del>    | <del>hrithika</del>    | <del>hrithika</del>    | ✓      | ✓ |
| 60 | LVML21CS185 | NIVED K SURENDRAN | <del>Nived</del>       | <del>Nived</del>       | <del>Nived</del>       | ✓      | ✓ |

MANJU M. *Manju M.*



**S4 CSE - C (2021-25) BATCH**  
**ADD - ON COURSE ATTENDANCE**

| Roll No. | University Reg. No. | Student Name     | Signature  |            |            |            |            |
|----------|---------------------|------------------|------------|------------|------------|------------|------------|
|          |                     |                  | 15-03-2023 | 16-03-2023 | 17-03-2023 | 18-03-2023 | 19-03-2023 |
| 1        | VML21CS003          | ABHAY KV         |            |            |            | ✓          | ✓          |
| 2        | VML21CS006          | ABHIJITH E S     |            |            | ABSENT     |            |            |
| 3        | VML21CS008          | ABHINAV K        |            |            |            | ✓          | ✓          |
| 4        | VML21CS009          | ABHINAV K        |            |            |            | ✓          | ✓          |
| 5        | VML21CS011          | ABHINAV P P      |            |            |            | ✓          | ✓          |
| 6        | VML21CS014          | ABHIRAM MANOJ    |            |            |            | ✓          | ✓          |
| 7        | VML21CS017          | ABHISHEK P       |            |            |            | ✓          | ✓          |
| 8        | VML21CS023          | ADWAITH ASHOKAN  |            |            |            | ✓          | ✓          |
| 9        | VML21CS026          | AKASH E          |            |            |            | ✓          | ✓          |
| 10       | VML21CS030          | AKSHAY DEVARAJAN |            |            | ABSENT     |            |            |
| 11       | VML21CS033          | ALAT JOSEPH      |            |            |            | ✓          | ✓          |
| 12       | VML21CS043          | AMAL BHAGYADAS   |            |            |            | ✓          | ✓          |
| 13       | VML21CS046          | AMAL ROY         |            |            |            | ✓          | ✓          |
| 14       | VML21CS049          | AMEESHA P JOSEPH |            |            |            | ✓          | ✓          |
| 15       | VML21CS054          | ANAND SHIVARAM   |            |            |            | ✓          | ✓          |
| 16       | VML21CS055          | ANANDU RAMESH    |            |            |            | ✓          | ✓          |
| 17       | VML21CS058          | ANSIYA K P       |            |            |            | ✓          | ✓          |
| 18       | VML21CS059          | ANTO JOSEPH      |            |            |            | ✓          | ✓          |
| 19       | VML21CS061          | ANUSREE K        |            |            |            | ✓          | ✓          |
| 20       | VML21CS064          | ARJUN BIJU       |            |            |            | ✓          | ✓          |

|    |            |                     |                  |                 |                  |        |   |   |
|----|------------|---------------------|------------------|-----------------|------------------|--------|---|---|
| 21 | VML21CS067 | ARLIN PHILIP SHYJAN | <u>A</u>         | <u>A</u>        | <u>A</u>         |        | ✓ | ✓ |
| 22 | VML21CS070 | ASHFAH ASHRAF       | <u>Ashraf</u>    | <u>Ashraf</u>   | <u>Ashraf</u>    |        | ✓ | ✓ |
| 23 | VML21CS073 | ASWANTH K M         | <u>Swanth</u>    | <u>Swanth</u>   | <u>Swanth</u>    |        | ✓ | ✓ |
| 24 | VML21CS075 | ATHUL AUGUSTINE     | <u>Athul</u>     |                 | <u>Athul</u>     |        | ✓ | ✓ |
| 25 | VML21CS078 | AVINASH DINESH      | <u>Avinash</u>   |                 | <u>Avinash</u>   | ABSENT |   |   |
| 26 | VML21CS081 | BHARADWAJ N K       | <u>BK</u>        | <u>BK</u>       | <u>BK</u>        |        | ✓ | ✓ |
| 27 | VML21CS084 | DELIN BENNY         |                  |                 | <u>Delin</u>     | ABSENT |   |   |
| 28 | VML21CS087 | FAHMI M             | <u>Fahmi</u>     | <u>Fahmi</u>    | <u>Fahmi</u>     |        | ✓ | ✓ |
| 29 | VML21CS088 | FOUZAN P            | <u>Fouzan</u>    | <u>Fouzan</u>   | <u>Fouzan</u>    |        | ✓ | ✓ |
| 30 | VML21CS090 | GEO M BENNY         | <u>GEO</u>       |                 |                  | ABSENT |   |   |
| 31 | VML21CS093 | GOUTHAM K LAL       | <u>Goutham</u>   | <u>Goutham</u>  |                  |        | ✓ | ✓ |
| 32 | VML21CS096 | HARIKRISHNA P.V     | <u>Hari</u>      |                 |                  | ABSENT |   |   |
| 33 | VML21CS099 | JANAK RAMESH        | <u>Janak</u>     | <u>Janak</u>    | <u>Janak</u>     |        | ✓ | ✓ |
| 34 | VML21CS102 | JERITT JITHIN       | <u>Jeritt</u>    |                 |                  | ABSENT |   |   |
| 35 | VML21CS106 | JOEL MATHEW         | <u>Joel</u>      |                 |                  | ABSENT |   |   |
| 36 | VML21CS108 | JOSHUA SAJEEV       | <u>Joshua</u>    | <u>Joshua</u>   | <u>Joshua</u>    |        | ✓ | ✓ |
| 37 | VML21CS111 | JYOTHIS PAUL        | <u>Jyothis</u>   | <u>Jyothis</u>  | <u>Jyothis</u>   |        | ✓ | ✓ |
| 38 | VML21CS117 | LAKSHMI HARIDASAN   | <u>Lakshmi</u>   | <u>Lakshmi</u>  | <u>Lakshmi</u>   |        | ✓ | ✓ |
| 39 | VML21CS129 | M V NAVANEETH       | <u>Navaneeth</u> |                 | <u>Navaneeth</u> |        | ✓ | ✓ |
| 40 | VML21CS122 | MOHITH PRAKASH      | <u>Mohith</u>    | <u>Mohith</u>   | <u>Mohith</u>    |        | ✓ | ✓ |
| 41 | VML21CS125 | MUHAMMED RIHAN AC   | <u>Rihan</u>     | <u>Rihan</u>    | <u>Rihan</u>     |        | ✓ | ✓ |
| 42 | VML21CS128 | MUSHARAF MUSTHAFA   | <u>Musharaf</u>  | <u>Musharaf</u> | <u>Musharaf</u>  |        | ✓ | ✓ |
| 43 | VML21CS131 | NANDANARAJ          | <u>Nandan</u>    | <u>Nandan</u>   | <u>Nandan</u>    |        | ✓ | ✓ |
| 44 | VML21CS137 | NEHA                | <u>Neha</u>      | <u>Neha</u>     | <u>Neha</u>      |        | ✓ | ✓ |
| 45 | VML21CS141 | NIVED SUNIL         | <u>Nived</u>     | <u>Nived</u>    | <u>Nived</u>     |        | ✓ | ✓ |

|    |            |                        |                               |                               |                               |   |   |
|----|------------|------------------------|-------------------------------|-------------------------------|-------------------------------|---|---|
| 46 | VML21CS144 | RICHA ROY              | <i>Ricah Roy</i>              | <i>Ricah Roy</i>              | <i>Ricah Roy</i>              | ✓ | ✓ |
| 47 | VML21CS146 | RITHUL K RAJESH        | <i>Rithul K Rajesh</i>        | <i>Rithul K Rajesh</i>        | <i>Rithul K Rajesh</i>        | ✓ | ✓ |
| 48 | VML21CS147 | ROBIN C.B              | <i>Robin C.B</i>              | <i>Robin C.B</i>              | <i>Robin C.B</i>              | ✓ | ✓ |
| 49 | VML21CS150 | SANGEETHA RAMAKRISHNAN | <i>Sangeetha Ramakrishnan</i> | <i>Sangeetha Ramakrishnan</i> | <i>Sangeetha Ramakrishnan</i> | ✓ | ✓ |
| 50 | VML21CS153 | SAYANTH KP             | <i>Sayanth KP</i>             | <i>Sayanth KP</i>             | <i>Sayanth KP</i>             | ✓ | ✓ |
| 51 | VML21CS154 | SAYANTH P              | <i>Sayanth P</i>              | <i>Sayanth P</i>              | <i>Sayanth P</i>              | ✓ | ✓ |
| 52 | VML21CS159 | SHARON MK              | <i>Sharon MK</i>              | <i>Sharon MK</i>              | <i>Sharon MK</i>              | ✓ | ✓ |
| 53 | VML21CS161 | SHILPA C               | <i>Shilpa C</i>               | <i>Shilpa C</i>               | <i>Shilpa C</i>               | ✓ | ✓ |
| 54 | VML21CS163 | SHYAMDEV K             | <i>Shyamdev K</i>             | <i>Shyamdev K</i>             | <i>Shyamdev K</i>             | ✓ | ✓ |
| 55 | VML21CS166 | SOORYA NATH M          | <i>Soorya Nath M</i>          | <i>Soorya Nath M</i>          | <i>Soorya Nath M</i>          | ✓ | ✓ |
| 56 | VML21CS168 | SREYA MC               | <i>Sreya MC</i>               | <i>Sreya MC</i>               | <i>Sreya MC</i>               | ✓ | ✓ |
| 57 | VML21CS171 | SWATHI KRISHNA         | <i>Swathi Krishna</i>         | <i>Swathi Krishna</i>         | <i>Swathi Krishna</i>         | ✓ | ✓ |
| 58 | VML21CS174 | TINA THOMAS            | <i>Tina Thomas</i>            | <i>Tina Thomas</i>            | <i>Tina Thomas</i>            | ✓ | ✓ |
| 59 | VML21CS176 | VAIBHAV PRASANNAN      | <i>Vaibhav Prasannan</i>      | <i>Vals</i>                   |                               | ✓ | ✓ |
| 60 | VML21CS177 | VAISAKH P              | <i>Vaisakh P</i>              | <i>Vaisakh P</i>              |                               | ✓ | ✓ |
| 61 | VML21CS180 | VISHAL KRISHNA U V P   | <i>Vishal Krishna U V P</i>   | <i>Vishal Krishna U V P</i>   | <i>Vishal Krishna U V P</i>   | ✓ | ✓ |
| 62 | VML21CS183 | VIVEK RAJEEV V         | <i>Vivek Rajeev V</i>         | <i>Vivek Rajeev V</i>         | <i>Vivek Rajeev V</i>         | ✓ | ✓ |

MANJU M.

*Check*

COMPUTER SCIENCE ENGINEERING DEPARTMENT  
PRESENTS TRAINING PROGRAM ON

# OBJECT ORIENTED PROGRAMMING IN PYTHON

15-03-2023 TO 19-03-2023  
3 DAYS OFFLINE. 2 DAYS ONLINE WTH PROJECT

## STAFF COORDINATORS :

MS. SUHADA C  
MS. MANJU M  
(ASSISTANT PROFESSOR)

## STUDENT COORDINATORS :

KAMAL SURESH - 54 CSE B  
JUSTIN JAMES THOMAS - 54 CSE B

## **VISION OF THE DEPARTMENT**

To contribute to the society through excellence in scientific and knowledge-based education utilizing the potential of computer science and engineering with a deep passion for wisdom, culture and values.

## **MISSION OF THE DEPARTMENT**

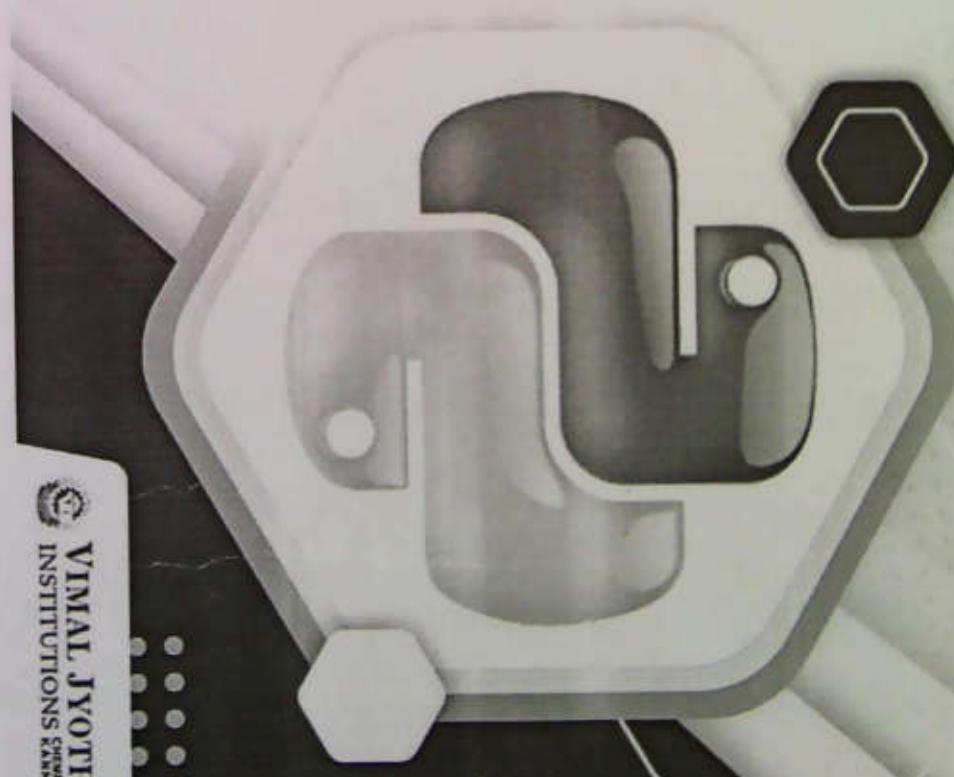
To promote all-round growth of an individual by creating futuristic environment that fosters critical thinking, dynamism and innovation to transform them into globally competitive professionals.

To undertake collaborative projects which offer opportunities for long-term interaction with academia and industry.

To develop human potential to its fullest extent so that intellectually capable and optimistic leaders can emerge in a range of professions.



*AKH*



**VIMAL JYOTI**  
INSTITUTIONS  
SHIVAMOGGA KANNUR



# PROGRESSUM

IN ASSOCIATION WITH NEOVENT INNOVATIONS  
FIVE DAYS PYTHON TRAINING PROGRAMME

VIMAL JYOTHI ENGINEERING COLLEGE KANNUR



#startupindia



## COURSE SYLLABUS

- Introduction of Python
- Installing Python IDES – Python IDLE and Anaconda
- Writing Your First Python Program
- Data-types in Python
- Variables in Python – Declaration and Use
- Typecasting in Python
- Operators in Python – Assignment, Logical, Arithmetic etc.
- Taking User Input (Console)
- Conditional Statements – If else and Nested If else and elif
- Python Collections (Arrays) – List, Tuple, Sets and Dictionary
- Loops in Python – For Loop, While Loop & Nested Loops
- String Manipulation – Basic Operations, Slicing & Functions and Methods
- User Defined Functions – Defining, Calling, Types of Functions, Arguments
- Lambda Function
- Importing Modules – Math Module
- Basics of Object Oriented Programming
- Creating Class and Object
- Constructors in Python – Parameterized and Non-parameterized
- Inheritance in Python
- In built class methods and attributes
- Multi-Level and Multiple Inheritance
- Method Overriding and Data Abstraction
- Encapsulation and Polymorphism
- introduction to database and connecting database with python

| TRAINING DURATION | MODE       | BATCH SIZE |
|-------------------|------------|------------|
| 3 Days            | 6 Hrs./Day | OFFLINE    |
| 2 Days            | 2 Hrs./Day | ONLINE     |

## PAYMENT TERMS

| TRAINING MODE                           | PTD   | DAYS | AMOUNT | GST 18% | TOTAL           |
|---|-------|------|--------|---------|-----------------|
| 6 Hrs. Offline Training                 | 8,500 | 3    | 25,500 | 4,590   | <b>30,090/-</b> |
| 2 Hrs. Online Training                  | 4,000 | 2    | 8,000  | 1,440   | <b>9,440/-</b>  |
| <b>Total</b>                            |       |      |        |         | <b>39,530/-</b> |
| <b>If Payment by Account</b>            |       |      |        |         | <b>39,530/-</b> |
| <b>If Payment by cash (without GST)</b> |       |      |        |         | <b>30,000/-</b> |

*Prerequisites:*

- Student List
- Coordinator from faculties & students' side.
- Accommodation for Trainers & TQM

**"NB: Training Confirmation should be 5 days prior"**

## **TESTIMONIALS**

"All of the trainers were excellent, extremely Professional and knowledgeable, and created positive learning environments. As the Director of Training, I received nothing but positive feedback about all of the instructors who came to us via Progressum Edutech Private Limited"

- Prof. Jayaram.V, PTO, LMCST, Thiruvananthapuram

"Progressum Edutec has played an intrinsic role in enhancing the Employability Skills of our students. We have found great value in their training programs. It was an excellent experience to work with their team. All the trainers were knowledgeable, supportive and highly professional. We would recommend their services to any institution that would like to invest on their students"

- Justine M Augustine, TPO, Vimal Jyothy College of Engineering, Kannur

"We are extremely pleased with the services. They are professional, personable, resourceful, and always willing to help meet our training needs."

- Prof. Sangeetha Sagar, PTO, MESITAM, Kollam

Progressum was a pleasure to deal with regarding our training initiatives. They are professional, friendly, and quite supportive and accommodating. They demonstrate exceptional customer service and attention to detail always."

- Prof. Roshan T, TPO, Providence College of Engineering, Chengannur

## CLIENTELE

|    |   |
|----|---|
| 1  | College of Engineering, Karunagappally                            |
| 2  | College of Engineering, Perumon                                   |
| 3  | College of Engineering, Attingal                                  |
| 4  | Institute of Management and Technology, Punnapra                  |
| 5  | College of Engineering, Chengannur                                |
| 6  | College of Engineering, Vadakara                                  |
| 7  | College of Engineering, Thalassery                                |
| 8  | College of Engineering, Poonjar                                   |
| 9  | Vimal Jyothi Engineering College, Kannur                          |
| 10 | Providence Collegeof Engineering, Chengannur                      |
| 11 | MES Institute of Technology & Management, Chathannoor, Kollam     |
| 12 | Lourdes Matha College of Science & Technology, Thiruvananthapuram |
| 13 | TKM Institute of Technology, Kollam                               |
| 14 | Model Polytechnic College, Painav, Idukki                         |
| 15 | Musaliar College of Engineering & Technology, Pathanamthitta      |
| 16 | Sree Ayyappa College, Eramallikara, Chengannur                    |
| 17 | Asian School of Business, Thiruvananthapuram                      |
| 18 | UKF College of Engineering & Technology, Parippally               |
| 19 | College of Engineering, Punnapra                                  |
| 20 | University Institute of Technology, Alappuzha                     |
| 21 | Mount Zion Institute of Management, Pathanamthitta                |

## **PROGRESSUM**

**CORONA**, a word that has made the world pause, the humans to think value of their life and created an unstable condition in global economy. The pandemic had left people jobless and a fear in the mind of youngsters (UG / PG students) especially the final years about their dream career and the heavy competition outside.

We are presenting a small solution to this through **PROGRESSUM**, dream of 3 people who had successfully started off their careers in the field of placement training. It is the passion towards the work that we did, made us to think and decide to start a venture of our own by helping the future generation to pursue a career they had dreamt of.

The pandemic has hit the education system diversely paving the way to use advanced technology for educating the future generation. Hence, we have designed online classes and the sessions will be available to them in a flexible manner. Once the pandemic leaves the world, we intend to provide face to face learning as well.

From our experience, we have discovered that along with technical learning, it is very important for the students to get trained in soft skills and aptitude training as well. In order to accomplish this at the right time we are providing tailor made courses to every level of students / institutions in a most innovative way.

What we promise to offer:

- Effective and quality Trainings that satisfy the industry demand.
- Understand the need of students and provide trainings accordingly.
- Fully Committed and Passionate trainer, with deep Experience and knowledge in this area.

Our trainers are highly motivated career guidance trainers with experience in training large group across different states. Proven success in leveraging educational theories and methodologies to design, develop, and deliver successful training programs and integrate instructional technology to provide classroom and virtual training.

We strongly believe that students who undergo this training will have the will power and confidence to tackle any situations in their early stages of career and fetch them the job that they aspire. We provide them timely Mockup Tests and Sample Interviews, thereby enabling each student to determine the area of their weakness and helping them to overcome that. The personal feedbacks that we received from our students have helped us to fine tune the courses as per the student comfort as well as the industry requirements.



**Progressum Edutech Pvt Ltd**

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**VIMAL JYOTHI**  
**ENGINEERING COLLEGE**  
JYOTHI NAGAR, CHEMPERI – 670632, KANNUR D.T., KERALA  
An ISO 9001:2008 Certified Institution

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

VJ/CSE/AC/2023/4

20.12.2022

**APPOINTMENT ORDER**

Dear Sir/Madam,

Sub: - Add-on Course Syllabus Committee

The following Committee is hereby constituted for framing the syllabus of the Add-on Course "**ADCS 401 OBJECT ORIENTED PROGRAMMING IN PYTHON**" for the S4 BTech Computer Science and Engineering at Vimal Jyothi Engineering College.

| SI No. | Name of the Faculty   | Role        |
|--------|-----------------------|-------------|
| 1.     | Ms. Manju M.          | Coordinator |
| 2.     | Ms. Suhada C          | Member      |
| 3.     | Dr. Jeethu V. Devasia | Member      |

The Coordinator is requested to convene meetings of the committee, prepare the syllabus and send the final version in the format in compliance with KTU syllabus.

Regards,

Dr. Jeethu V. Devasia

Professor & HoD CSE

Copy To:-

Ms. Suhada C

Ms. Manju M