



**RAMAIAH**

College of Arts, Science  
& Commerce

ಎಮ್ ಎಸ್ ರಾಮಯ್ಯ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಕಾಲೇಜು

**M S Ramaiah College of Arts, Science and Commerce**

Re-accredited 'A' by NAAC, Permanently Affiliated to Bengaluru City University,  
Approved by Government of Karnataka, Approved by AICTE, New Delhi,  
Recognized by UGC under 2f & 12B of UGC act 1956



(National Institutional Ranking Framework, Ministry of Education, Govt of India)

Ranked 62<sup>nd</sup> in NIRF India Ranking by MHRD, New Delhi

DBT Star College Scheme

Ref.No: MSRCASC/CHEM-BIOCHEM/2021 - 22/02

Date: 21/06/2021

## CIRCULAR

### Department of Chemistry / Biochemistry

Department of Chemistry /Biochemistry is organizing Value Added Program on “**Advanced Bioinformatics: Biological databases and Data Analysis**” from 5<sup>th</sup> July to 24<sup>th</sup> July 2021.  
Interested M.Sc. and B.Sc. Students can register for this program on or before 30<sup>th</sup> June 2021.

#### Contact for Registration:

**Dr. Vasanth K Bhaskara**

Assistant Professor

Dept. of Chemistry/Biochemistry

MSRCASC

#### Event Coordinators:

**Dr. Krishna Rao Jagarlamudi**

Assistant Professor

Dept. of Chemistry/Biochemistry

MSRCASC

**Mrs. Malini M R**

Assistant Professor

Dept. of Chemistry/Biochemistry

MSRCASC

  
HEAD OF THE DEPARTMENT

  
PRINCIPAL  
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W www.msrcasc.edu.in



## Resource Persons

### Dr. Bharti Mittal

Founder and Research Director, Immunitet Labs  
Bengaluru

### Dr. Vasanth Kumar B

Assistant Professor, MSRCASC

### Dr. Krishna Rao J

Assistant Professor, MSRCASC

### Mrs. Malini M R

Assistant Professor, MSRCASC

## Registration

Participants should enroll through email their names to [ankammachowdary1@gmail.com](mailto:ankammachowdary1@gmail.com). The registration is no registration fee. The last date for registration is 30th Jul 2021.

## Address for Correspondence:

**Dr. Krishna Rao J,**

[ankammachowdary1@gmail.com](mailto:ankammachowdary1@gmail.com)

Mobile: 8056580552

## Patrons

**Dr.M.R.Jayaram,**

Chairman – GEF

**Sri. M.R.Janakiram,**

Director - GEF

**Sri. M. R. Kodandaram,**

Director GEF

**Sri. B S RamaPrasad,**

Chief Executive – GEF (Engg. & GS)

**Sri. G Ramachandra,**

Chief Executive – GEF (Engg. & GS)

## Organizing Committee Members

**Dr. A. Nagarathna,**

Principal, MSRCASC

**Mr. Prasanna Kumar S G,**

Associate Professor & HOD

Dept. Of Chemistry and

Biochemistry. MSRCASC.

**Dr. Krishna Rao J,**

Assistant Professor,

MSRCASC.

**Mrs. Malini M R,**

Assistant Professor,

MSRCASC.

**Dr. Vasanth Kumar Bhaskara,**

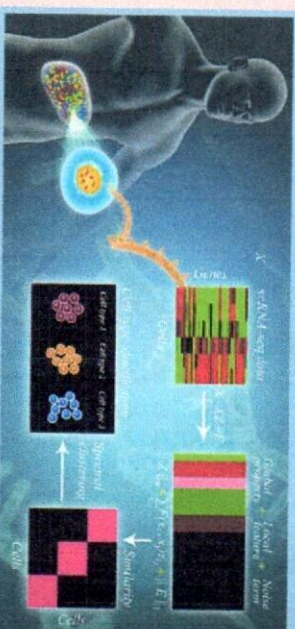
Assistant Professor,

MSRCASC.

## VALUE ADDED COURSE

On

**"Advanced Bioinformatics:  
Biological databases and data  
analysis"**



**Date: 05-07-2021 to 24-07-2021**

**Venue:** Dept. Of Chemistry and

Biochemistry, MSRCASC

**Organized by:**

Department of Chemistry and Biochemistry

**M S Ramalah College**

**of Arts, Science and**

**Commerce**

Bangalore -560054

[www.msrtcasc.edu.in](http://www.msrtcasc.edu.in)

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## M S RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE (MSRCASC)

Dr. M S Ramaiah, a visionary and philanthropist established "Gokula Education Foundation (GEF)", in the year 1962, to deliver education and healthcare for the betterment of mankind. Under the tutelage of GEF, M.S Ramaiah college of Arts, Science and Commerce (MSRCASC) was established in 1994. MSRCASC is Re-accredited with "A" Grade by NAAC, permanently affiliated to Bangalore City University (BCU), and approved by AICTE.

The college offers 8 UG courses and 6 PG courses in Arts, Science, and Commerce, to around 2700 students. The Department of Life Sciences conducts 2 UG and 4 PG Programs in Microbiology, Chemistry, Biotechnology and Biochemistry to about 800 students. The dedicated academic faculty from our college have extensive teaching experience and have pursued doctoral and postdoctoral work in eminent institutes in India and abroad.

M S Ramaiah College not only educates young students to excel academically, but also strives hard to ingrain social responsibilities in them.

## DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

The department of Chemistry and Biochemistry was established in the year 1994 and currently conducts both UG and PG courses in Chemistry and Biochemistry. The syllabus is constantly supported by current day, real life applications carrying utility value. The department has very good infrastructural facilities to carry out teaching and research activities. Highly qualified faculty are assigned with theory and practical classes and are instructed to emphasize on the 'learning' of the students. The department undertakes research projects of national importance in the field of biological chemistry and has attracted funds from various agencies. Through the sincere effort of our faculty we have obtained many University ranks, 90-100% results in both UG and PG courses consistently. Our students have been placed in various companies and many are pursuing their higher educations in India and abroad. We encourage students in doing research, present papers at National conferences, publish their findings in Journals of repute and also participate in co-curricular and extra-curricular activities.

## Objective and Outcome

The aim of this value-added course is to upskill the biology students how diseases will be caused by gene modification and how to analyze the gene sequencing by using current techniques.

This course may mould the students with skills required for emerging health care sector

## Modules

### Biological Databases

### Gene Sequencing techniques

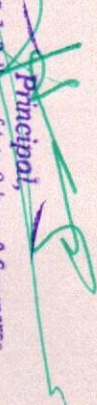
### Sequence Alignment

### Genome Sequencing

### Software's

### Data analysis of DNA seq

### Procedures of High through put data analysis

  
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DBT Star College Scheme

## DEPARTMENT OF CHEMISTRY/BIOCHEMISTRY

### REPORT ON VALUE ADDED PROGRAM

**Title:** Advanced Bioinformatics: Biological databases and Data Analysis

**Duration:** 30 Hrs

**Program Coordinators:** Dr. Krishna Rao J, Assistant professor, MSRCASC

Mrs. Malini M R, Assistant professor, MSRCASC

**Number of Students Benefited:** 35

Department of Chemistry/Biochemistry has initiated the Value-Added Program for Life science students additional to their regular curriculum. Through this certificate program, the department aims at imparting crucial and emerging filed i.e Bioinformatics and data Analysis skills to the students, which is very much important in acquiring knowledge pertaining to Research and Job opportunities in Clinical data analytics firms. This program is conducted via online classes as it involves programming and searching biological databases etc. The Program constitutes 30 Credit Hours Syllabus (15 hours' theory+ 15 hours hands on training).

**Objective:** To upskill the students with current emerging techniques in Bioinformatics by Hands on training

This course imparts the skills on use of various advanced databases for biologists and data analysis by using Bioinformatics software s which are essential for students with Biology as a major subject. During the course students trained for the following databases

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1. Pubmed
2. Biogps
3. David Databases
4. Blast
5. Sequence analysis databases
6. Protein Databases

The students understood the basic principles of the genetics and proteomics which are mentioned above in theory classes and they also learned to perform these sequence analysis and data analysis during hands on training individually. They also came to know about the applications of these databases in the research and industries.

The classes were Conducted in online mode by Dr. Krishna Rao J, Mrs. Malini M R, Dr. Vidya and Dr. Vasanth K Bhaskara from MSRCASC and, Dr. Bharathi Mittal, from the Immunitet labs, Bengaluru. This program benefited more for the students who were interested in research and involved in projects.

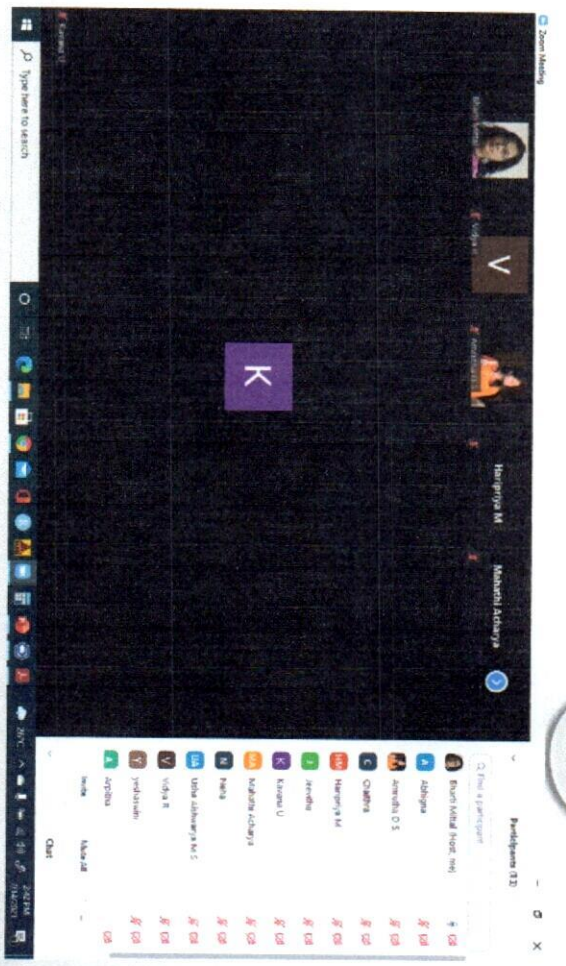
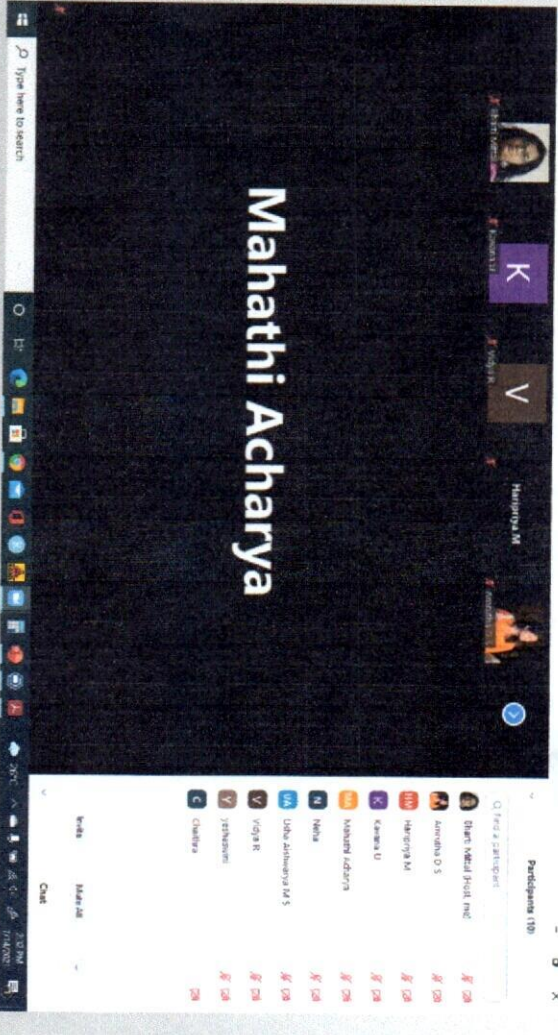
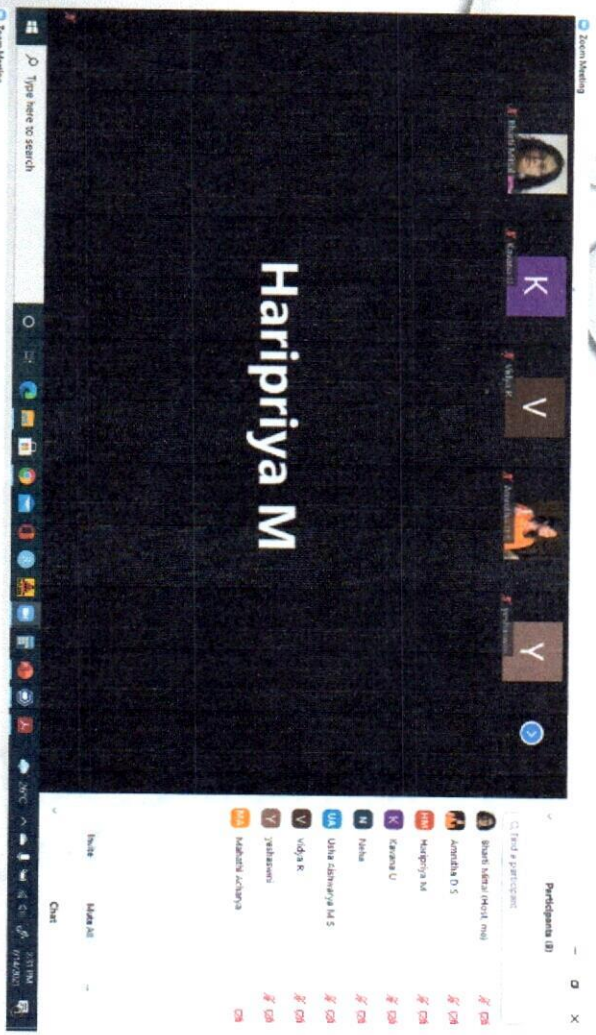
After the completion of theory and hands on training, the test was conducted to check their understanding level for practical classes. Based on the marks they scored in the internal tests in practical, viva and also by considering their attendance students were assessed to clear the Value-Added program.

The Program was commenced from 05/07/2021 and ended-up on 24/07/2021. The B.Sc. students from 6<sup>th</sup> semester and MSc Biochemistry 1<sup>st</sup> Semester have been actively enrolled and participated in this Value-Added Program and are benefitted. At the end of program, the feedback was taken from all the students who have participated and certificated were issued.

**Out Come:** Students learned how to operate biological databases to find sequence of genes and mutations and are able to predict if mutation have any effect on function of protein.

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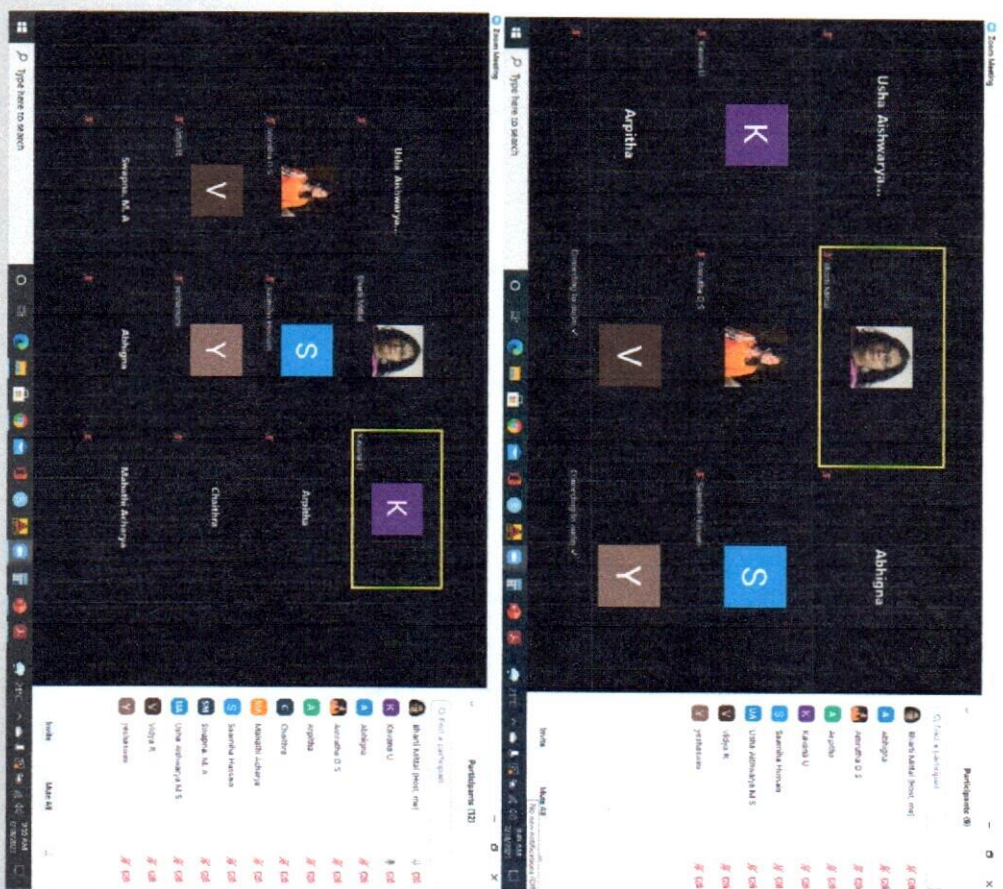
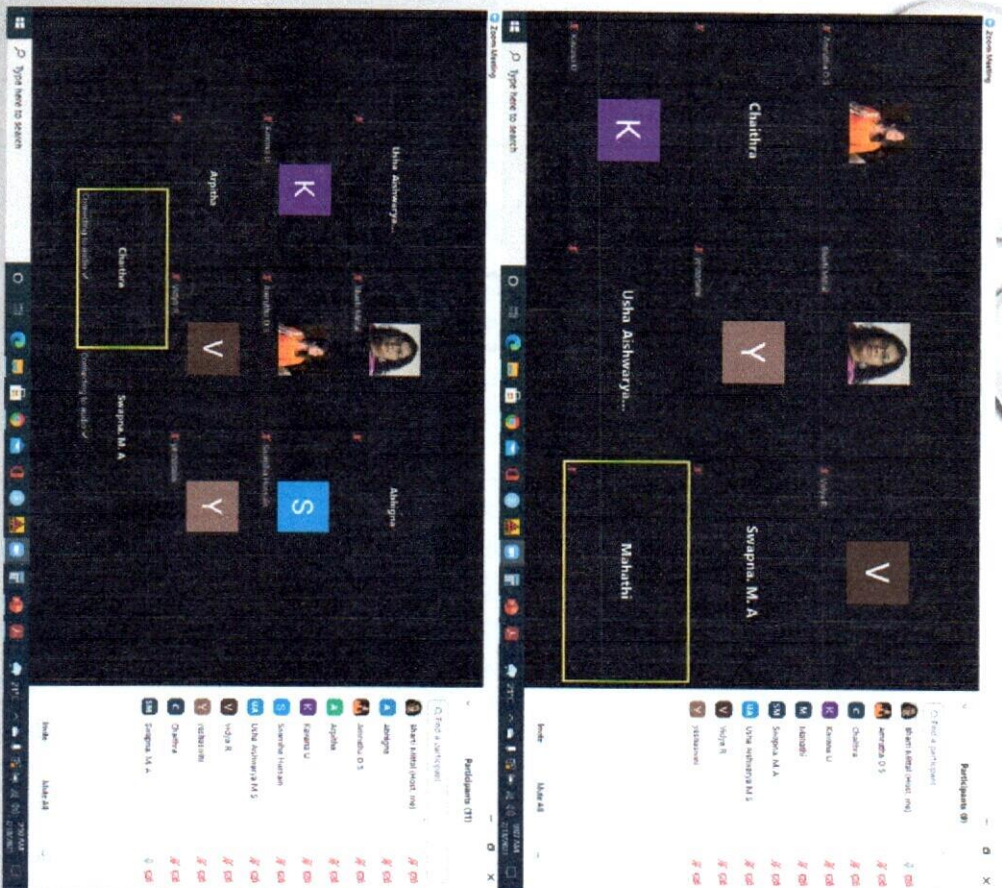




# MULTILE SEQUENCE ALIGNMENT

DATE : 14-07-2021  
2:30 PM - 4:00 PM





# PHYLOGENETIC ANALYSIS

DATE : 18-07-2021

9:00 AM - 10:10 AM

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 Bangalore - 560 084



**M S Ramaiah College of Arts, Science and Commerce**

**Department of Chemistry/ Biochemistry**

**Syllabus for Value Added Program**

**Title:** "Advanced Bioinformatics: Biological databases and Data Analysis"

**Duration:** 30 Hrs

**Program Coordinators:** Dr. Krishna Rao Jagarlamudi, Assistant Professor, MSRCASC

Mrs. Malini MR, Assistant Professor, MSRCASC

**30 Hours**

**Module 1**

**3 Hours**

**Principles and Fundamentals of genetics:** Central dogma, DNA structure, Transcription, Translation and Overview of genetic code

**Module 2**

**6 Hours**

**Principles of Bioinformatics:** Definition and scope of Computational Biology and Bioinformatics. Major Bioinformatics Resources: NCBI, EBI, ExPaSy. Pairwise sequence alignments: Sequence similarity, identity, and homology. Global and local alignment, Dot plots for sequence comparison, Dynamic programming, BLAST and PSI-Blast, Application of Blast tool, Concept of Scoring matrix (PAM and BLOSUM).

**Module 3**

**6 Hours**

**Column liquid chromatography including HPLC:** Multiple sequence alignments: Progressive Alignment Algorithm (ClustalW), Application of multiple sequence alignment. Phylogenetic analysis: Definition and description of phylogenetic trees, a primer on computational phylogenetic analysis. Computational gene prediction methods, analysis of codon usage bias, computational prediction and analysis of regulatory sites. Schematic representations and structure visualization of proteins structure, Protein DataBank.

**Module 4**

**8 Hours**

**Hands On training:** Major Biological Databases and Information Retrieval. Homology Concept and Alignment of pairs of sequence, Global & Local Alignment, Basic Local Alignment Search Tool (BLAST), Other Blast options, PSI-BLAST.

**Module 5**

**7 Hours**

**Hands on Training:** Computational Gene Prediction and Genome annotation and Computational Phylogenetic Analysis

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## M S Ramaiah College of arts, science and Commerce

### Department of Chemistry/Biochemistry

#### Value added Program on “Advanced Bioinformatics: Biological databases and Data Analysis”

##### Assessment procedure for value added program

Department of Chemistry/Biochemistry organized value-added Course “Advanced Bioinformatics: Biological databases and Data Analysis” from 05/07/2021 to 24/07/2021. 35 students participated in this program and the course duration was 30 hours. The students actively participated in the training and also gained the hands-on experience on Bioinformatics Techniques. Course Facilitators assessed the students based on the performance during training sessions and participation certificate were given to the students after course completion.

| Sl. No | Students Name      | Register No. | Attendance (5) | Viva (5) | Practical Skills (20) | Total (30) |
|--------|--------------------|--------------|----------------|----------|-----------------------|------------|
| 1      | Abhigna            | BC200001     | 5              | 3        | 15                    | 23         |
| 2      | Amrutha D. S       | BC200002     | 5              | 3        | 20                    | 28         |
| 3      | Arpitha Francis    | BC200003     | 5              | 4        | 20                    | 29         |
| 4      | Chaitra            | BC200004     | 5              | 4        | 18                    | 27         |
| 5      | Haripriya M        | BC200005     | 5              | 3        | 15                    | 23         |
| 6      | Jeevitha S         | BC200006     | 5              | 3        | 16                    | 24         |
| 7      | Kavana U           | BC200007     | 5              | 4        | 20                    | 29         |
| 8      | Mahathi R Achar    | BC200008     | 5              | 4        | 18                    | 27         |
| 9      | Saamiha Hussain    | BC200010     | 5              | 3        | 14                    | 22         |
| 10     | Swapna M A         | BC200011     | 5              | 3        | 18                    | 26         |
| 11     | Usha Aishwarya M S | BC200012     | 5              | 4        | 17                    | 26         |
| 12     | Vidya R            | BC200013     | 5              | 4        | 19                    | 28         |

  
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|    |                      |          |   |   |    |    |
|----|----------------------|----------|---|---|----|----|
| 13 | Yashaswini           | BC200014 | 5 | 3 | 16 | 24 |
| 14 | Advaith K Murali     | S1814458 | 5 | 3 | 18 | 26 |
| 15 | Aishwarya Menon      | S1814459 | 5 | 4 | 18 | 27 |
| 16 | Bhoomi Desai         | S1814485 | 5 | 4 | 19 | 28 |
| 17 | Bhoomika C N         | S1814485 | 5 | 3 | 18 | 26 |
| 18 | Bindhu V             | S1814486 | 5 | 3 | 17 | 25 |
| 19 | Bindushree S S       | S1814487 | 5 | 4 | 19 | 28 |
| 20 | Chandan Gowda U      | S1814488 | 5 | 4 | 15 | 24 |
| 21 | Chandana N           | S1814489 | 5 | 3 | 20 | 28 |
| 22 | Chaya Devi H         | S1814490 | 5 | 3 | 14 | 22 |
| 23 | Likitha V Gaikwad    | S1814523 | 5 | 4 | 16 | 25 |
| 24 | M Lahari             | S1814524 | 5 | 4 | 18 | 27 |
| 25 | Madugula Shabareesh  | S1814525 | 5 | 3 | 13 | 21 |
| 26 | Mahi Al Ahmad Dar    | S1814526 | 5 | 3 | 16 | 24 |
| 27 | Nandan P             | S1814542 | 5 | 3 | 18 | 26 |
| 28 | Nandini S            | S1814543 | 5 | 3 | 20 | 28 |
| 29 | Nandini Vijayakar    | S1814544 | 5 | 4 | 17 | 26 |
| 30 | Ranjini R            | S1814570 | 5 | 4 | 18 | 27 |
| 31 | Samruddhi Srinath    | S1814579 | 5 | 3 | 18 | 26 |
| 32 | Rashmi R             | S1892002 | 5 | 3 | 18 | 26 |
| 33 | Tamanna Priyadarsani | S1814600 | 5 | 4 | 20 | 29 |

  
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|    |           |          |   |   |    |    |
|----|-----------|----------|---|---|----|----|
| 34 | Tanusha C | S1814601 | 5 | 4 | 20 | 29 |
| 35 | Vipra Rai | S1814615 | 5 | 3 | 18 | 26 |

  
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**M S Ramaiah College of Arts, Science and Commerce**  
**Department of Chemistry/ Biochemistry**  
**Students Attendance of Value-Added Program**

on

**“Advanced Bioinformatics: Biological databases and Data Analysis”**

Date: 05-07-2021 to 24-07-2021 (30 hrs)

| Sl.No. | Students Name   | Reg. No  | 1   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|--------|-----------------|----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1      | Abhigna         | BC200001 | 5/2 | 12 | 14 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 2      | Amrutha D. S    | BC200002 | A   | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 3      | Arpitha Francis | BC200003 | 1   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 4      | Chaitra         | BC200004 | A   | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 5      | Haripriya M     | BC200005 | 1   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 6      | Jeevitha S      | BC200006 | 1   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 7      | Kavana U        | BC200007 | A   | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 8      | Mahathi R Achar | BC200008 | 1   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

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|----|-------------------|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 9  | Saamih Hussain    | BC200010  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 10 | Swapna M A        | BC200011  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 11 | Usha Aishwarya MS | BC200012  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 12 | Vidya R           | BC200013  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 13 | Yashaswini        | BC200014  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 14 | Vipra Rai         | SI1814615 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 15 | Advaith K Murali  | SI1814458 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 16 | Aishwarya Menon   | SI1814459 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 17 | Bhoomi Desai      | SI1814485 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 18 | Bhoomika C N      | SI1814485 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 19 | Bindhu V          | SI1814486 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 20 | Bindushree S S    | SI1814487 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 21 | Chandan Gowda U   | SI1814488 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 22 | Chandana N        | SI1814489 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 23 | Chaya Devi H      | SI1814490 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |



|    |                      |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----------------------|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 24 | Likitha V Gaikwad    | S1814523 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 25 | M Lahari             | S1814524 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | Madugula Shabareesh  | S1814525 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 27 | Mahi Al Ahmad Dar    | S1814526 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 28 | Nandan P             | S1814542 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 29 | Nandini S            | S1814543 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 30 | Nandini Vijayakar    | S1814544 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 31 | Ranjini R            | S1814570 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 32 | Samruddhi Srinath    | S1814579 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 33 | Rashmi R             | S1892002 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 34 | Tamanna Priyadarsani | S1814600 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 35 | Tanusha C            | S1814601 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |



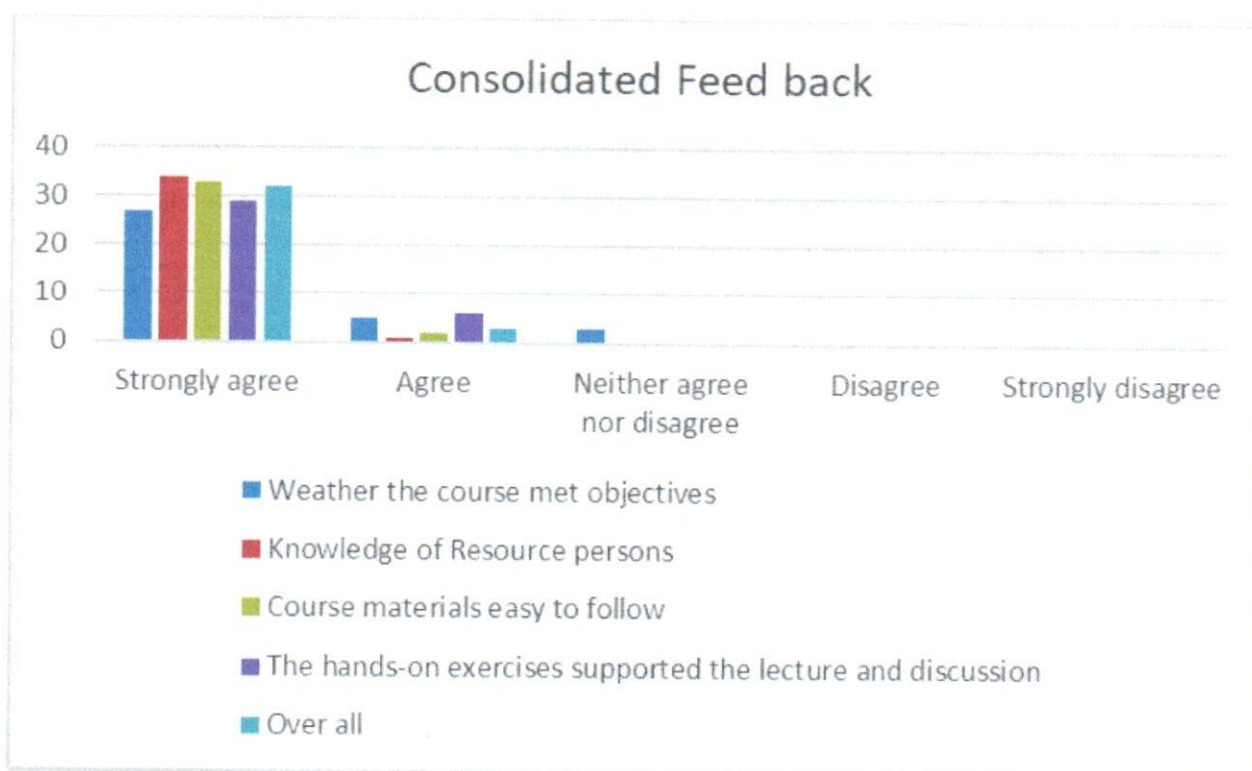
# M S Ramaiah College of arts, science and Commerce

## Department of Chemistry/Biochemistry

### Value added Program on “Advanced Bioinformatics: Biological databases and Data Analysis”

#### Feed Back Report

| Questions asked                                             | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
|-------------------------------------------------------------|----------------|-------|----------------------------|----------|-------------------|
| Weather the course met objectives                           | 27             | 5     | 3                          | 0        | 0                 |
| Knowledge of Resource persons                               | 34             | 1     | 0                          | 0        | 0                 |
| Course materials easy to follow                             | 33             | 2     | 0                          | 0        | 0                 |
| The hands-on exercises supported the lecture and discussion | 29             | 6     | 0                          | 0        | 0                 |
| Over all                                                    | 32             | 3     | 0                          | 0        | 0                 |



*Principal,*  
M.S. Ramaiah College of Arts, Science & Commerce  
MSRIT Post, MSR Nagar  
Bangalore - 560 054





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## Certificate

This is to Certify that Mr./Ms./Mrs. **Saamiha Hussain**, Reg. No. BC200010 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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Co-Ordinator

Department of Chemistry/Biochemistry

**Mrs. Malini M R**  
Co-Ordinator

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**Mr. Prasanna Kumar S G**  
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This is to Certify that Mr./Ms./Mrs./Dr. **Vipra Rai**, Reg. No. S1814615 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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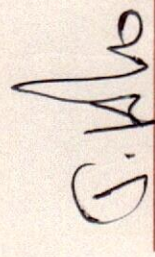
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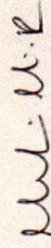
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This is to Certify that **Mr./Ms./Mrs./Dr. Samruddhi Srinath**, Reg. No. S1814579 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

  
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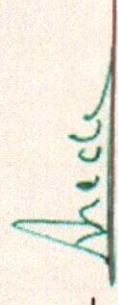
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This is to Certify that Mr./Ms./Mrs./Dr. **Rashmi R**, Reg. No. S1892002 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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## Certificate

This is to Certify that **Mr./Ms./Mrs./Dr. Tamanna Priyadarsani**, Reg. No. S1814600 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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This is to Certify that Mr./Ms./Mrs./Dr. **Nandini Vijayakar**, Reg. No. S1814544 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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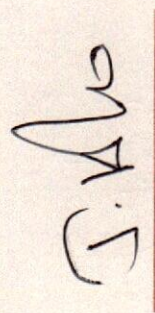
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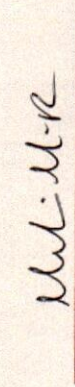
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This is to Certify that **Mr./Ms./Mrs./Dr. Ranjini R**, Reg. No. S1814570 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

  
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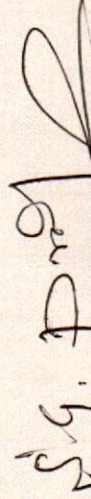
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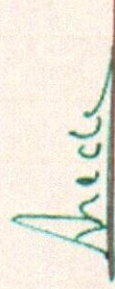
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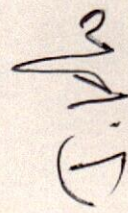
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This is to Certify that **Mr./Ms./Mrs./Dr. Mahi Al Ahmad Dar**, Reg. No. S1814526 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021



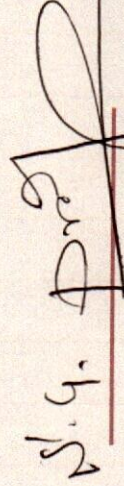
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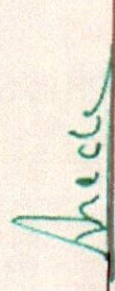
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## **Certificate**

This is to Certify that Mr./Ms./Mrs./Dr. **Nandan P**, Reg. No. S1814542 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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This is to Certify that Mr./Ms./Dr. **Nandini S**, Reg. No. S1814543 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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## Certificate

This is to Certify that Mr./Mrs./Dr. **Chandana N**, Reg. No. S1814489 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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## Certificate

This is to Certify that Mr./Ms./Dr. **Chaya Devi H**, Reg. No. S1814490 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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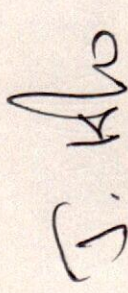
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This is to Certify that Mr./Ms./Mrs./Dr. **Likitha V Gaikwad**, Reg. No. S S1814523 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

  
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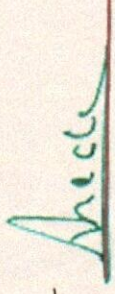
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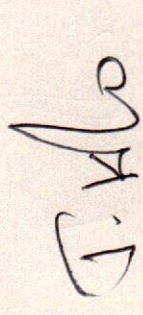
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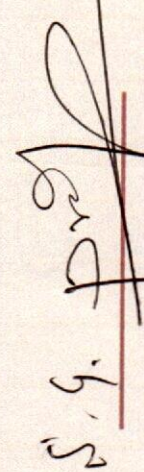
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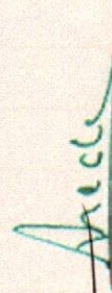
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This is to Certify that Mr./Ms./Mrs./Dr. **Chandan Gowda U**, Reg. No. S1814488 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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This is to Certify that **Mr./Ms./Mrs./Dr. Bindhu V**, Reg. No. S1814486 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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Co-Ordinator  
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## **Certificate**

This is to Certify that **Mr./Mrs./Dr. Advait K Murali**, Reg. No. S1814458 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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## Certificate

This is to Certify that Mr./Ms./Mrs./Dr. **Aishwarya Menon**, Reg. No. S1814459 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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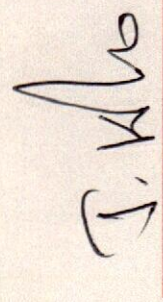
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## **Certificate**

This is to Certify that Mr./Ms./Mrs./Dr. **Bhoomi Desai**, Reg. No. S1814485 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

  
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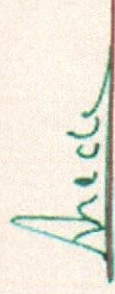
  
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This is to Certify that Mr./Ms./Mrs./Dr. **Bhoomika C N**, Reg. No. S1814485 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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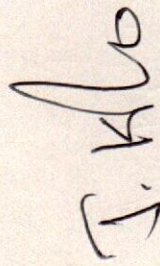
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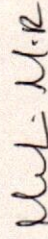
## Certificate

This is to Certify that Mr./Ms./Mrs./Dr. **Haripriya M**, Reg. No. BC2000005 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021



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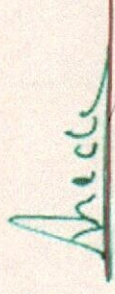
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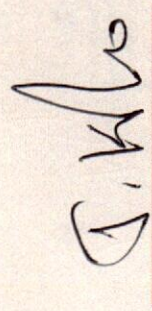
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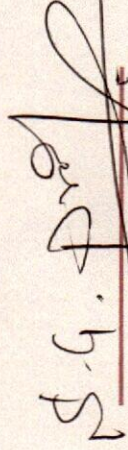
This is to Certify that Mr./Ms./Mrs./Dr. **Jeevitha S**, Reg. No. BC2000006 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

  
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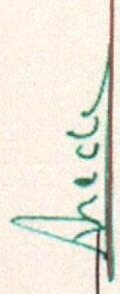
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This is to Certify that Mr./Ms./Mrs./Dr. **Kavana U**, Reg. No. BC200007 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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This is to Certify that Mr./Ms./Mrs./Dr. **Mahathi R**, Reg. No. BC2000008 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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## Certificate

This is to Certify that **Mr./Ms./Mrs./Dr. Swapna MA**, Reg. No. BC200011 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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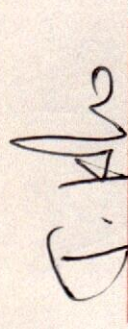


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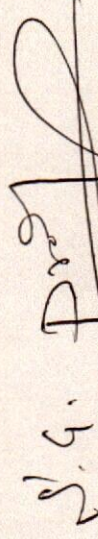
This is to Certify that **Mr./Ms./Mrs./Dr. Usha Aishwarya MS**, Reg. No. BC200012 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

  
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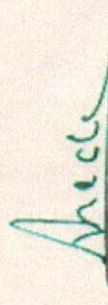
**Dr. Krishna Rao J**  
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This is to Certify that Mr./Ms./Mrs./Dr. **Vidya R**, Reg. No. BC200013 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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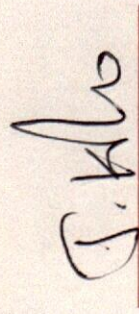
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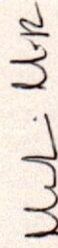
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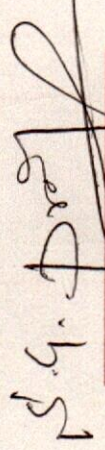
This is to Certify that **Mr./Ms./Mrs./Dr Amrutha DS**, Reg. No. BC2000002 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

  
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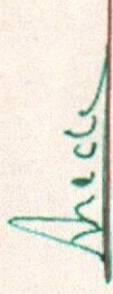
**Dr. Krishna Rao J**  
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## **Certificate**

This is to Certify that **Mr./Ms./Mrs./Dr Arpitha F**, Reg. No. BC2000003 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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This is to Certify that **Mr./Ms./Mrs./Dr Chaithra**, Reg. No. BC200004 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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## Certificate

This is to Certify that Mr./Ms./Mrs./Dr **Abhigna**, Reg. No. BC200001 has participated in value-added program on "*Advanced Bioinformatics: Biological databases and Data Analysis*" organised by the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru from 05.07.2021 to 24.07.2021

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