



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)



Accredited with "A" grade by NAAC
Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600 119, Tamilnadu, India.

School of Bio and Chemical Engineering

Department of Bioinformatics

Date: June 26, 2017

STUDENTS CIRCULAR

Ref No: SIST / Bioinfo / Odd - Sem / VAC / June 26, 2017

Dear Students,

This is to inform you that the following courses are being offered to students under the value-added certificate courses category for this academic year. Students belonging to the I year to the III of B. Sc and I and II year of M. Sc are welcome to enroll in these courses. The duration of every course is 30 hours. On completion of the course, you will obtain a certificate of accomplishment.

S. No	Name of the course	Faculty Coordinator
1	Bioinformatics Algorithms - A Hands on approach (September 04 – October 09, 2017)	Dr. Jemmy Christy
2	Microarray Data Analysis - Hands on (November 01 – December 05th 2017)	Dr. Swetha Sunkar
3	NGS Data Analytics – Workshop (January 22 to February 26th, 2018)	Dr. D. Alex Anand.

Venue

Biocomputing Lab, Department of Bioinformatics.

The last date for enrollment is - Closes 07 days before the start of each course.

HOD
Dr. H. Jemmy Christy

HEAD OF THE DEPARTMENT
DEPARTMENT OF BIOINFORMATICS
SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Jeppiaar Nagar, Rajiv Gandhi Salai
Chennai - 600 119

Copy to

School of Bio and Engineering classrooms
Heads of School of Bio and Engineering classrooms



SATHYABAMA

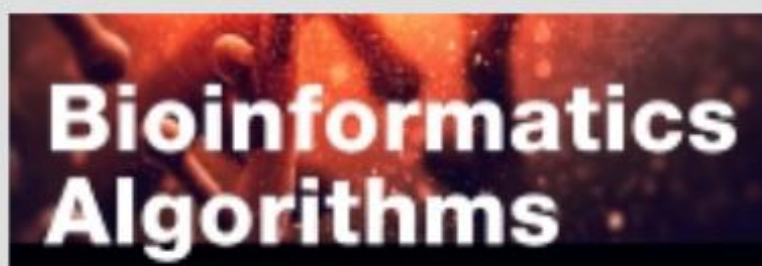
INSTITUTE OF SCIENCE AND TECHNOLOGY
(Deemed to be University)
www.sathyabama.ac.in



**Department of Bioinformatics &
The Centre for Molecular Data Science and Systems Biology**

Presents

BIOINFORMATICS ALGORITHMS - A HANDS ON APPROACH



September 04 – October 09, 2017

FACULTY CO - ORDINATOR - DR. JEMMY CHRISTY



COL Dr. JEPPIAAR
Founder Chancellor



Dr. Mariazeena Johnson
Chancellor



Dr. Marie Johnson
President

PATRONS

Dr. T. SASIPRASA, M.E., PH.D VICE - CHANCELLOR, SIST
Dr. S. S. RAO, M.B.A., PH.D REGISTRAR, SIST | Dr. E. LOGASHANMUGAM, M.E., PH.D., PRO VICE CHANCELLOR, SIST

Organizing Members - Dr. Jemmy Christy | Dr. Swetha Sunkar | Dr. D. Alex Anand,
Department of Bioinformatics, SIST

Facilitated by - The Students & Faculty, Department of Bioinformatics & CMDSSCB

Bioinformatics Algorithms - A Hands on approach
(September 04 – October 09, 2017)

Day	Date	Topics Covered	Faculty-In-Charge
1	04-09-2017	Sequence Analysis	Dr. Alex Anand
2	05-09-2017	Genomic Variation and Disease	Dr. Alex Anand
3	06-09-2017	Haplotypes and Population Genomics	Dr. Alex Anand
4	07-09-2017	Phylogenetics	Dr. Alex Anand
5	08-09-2017	Protein and RNA Analysis, Structure, and Dynamics	Dr. Alex Anand
6	09-09-2017	Microbiome and Metagenomics	Dr. Swetha Sunkar
7	11-09-2017	Single cell sequencing	Dr. Swetha Sunkar
8	12-09-2017	Cancer Genomics	Dr. Swetha Sunkar
9	13-09-2017	Pharmacogenomics	Dr. Swetha Sunkar
10	14-09-2017	Systems Biology	Dr. Swetha Sunkar
11	15-09-2017	Biological Networks and Integrative Analysis	Dr. Alex Anand
12	16-09-2017	Computational Drug Discovery	Dr. Alex Anand
13	18-09-2017	Imaging Informatics	Dr. Swetha Sunkar
14	19-09-2017	Natural Language Processing (NLP) and text mining	Dr. Swetha Sunkar
15	20-09-2017	Computational Phenotyping	Dr. Swetha Sunkar
16	21-09-2017	Machine Learning and Predictive Modeling	Dr. Alex Anand
17	22-09-2017	Data Security and Privacy	Dr. Alex Anand
18	23-09-2017	Data Structures and Algorithms for Biological Data	Dr. Alex Anand
19	25-09-2017	Monte Carlo methods	Dr. Alex Anand
20	26-09-2017	Nucleic acid secondary structure	Dr. Alex Anand
21	27-09-2017	Hidden Markov Models	Dr. Alex Anand
22	28-09-2017	Gene finding	Dr. Alex Anand
23	29-09-2017	Next Generation Sequencing: platforms, assembly, RNA-Seq	Dr. Jemmy Christy
24	30-09-2017	General discussion	Dr. Jemmy Christy
25	03-10-2017	Exam week	Dr. Jemmy Christy
26	04-02-2017	Exam week	Dr. Jemmy Christy
27	06-02-2017	Exam week	Dr. Jemmy Christy
28	07-02-2017	Exam week	Dr. Jemmy Christy
29	08-02-2017	Exam week	Dr. Jemmy Christy
30	09-02-2017	Exam week	Dr. Jemmy Christy

**Bioinformatics Algorithms - A Hands on approach
(September 04 – October 09, 2017)**

S. No	Nam e
1.	S.Mahalakshmi
2.	Amreesh Karthikeyan
3.	Poovendiran. P
4.	Sreesuganya K
5.	Yuganthini. R
6.	Anaswara T S
7.	S.P.Vaishali
8.	Elayaraja Dhandapani
9.	R.Poorvaja
10.	Karthick Raja Arulprakasam
11.	K.Gokilapriyavarthini
12.	Keerthana Sree S
13.	Saranya
14.	M. Fathima
15.	Haripriya J
16.	Dhivyaroopa R
17.	Mohanadevi. S
18.	Fathima. M
19.	Vinesh R
20.	Manjithra. M
21.	Malik Basha S
22.	Mary Soumiya M
23.	Monika
24.	S R Bharathkumaar
25.	Akshay Kumar
26.	Maulikkumar Thesiya
27.	Shivanjali
28.	S Sinthuja
29.	Priyankaa.B
30.	Mr. Ojasvi Dutta
31.	M.Kaviya Priya
32.	Selvi S
33.	S.Saivarshini
34.	Sathya
35.	Desam Neeharika
36.	Bashyam Praneetha
37.	Ananya Bajpai
38.	Jamalpur Naveen Kumar
39.	Jamalpur Naveen Kumar
40.	Suryani Guha
41.	Swaralipi Mitra
42.	Refana Shahul
43.	Jaisheela Vimali I

Bioinformatics Algorithms - A Hands on approach
(September 04 – October 09, 2017)
Report

This course is designed –

- To promote computational and algorithmic thinking and to grasp the foundations of computational problem – solving
- To tour algorithms on strings, trees and graphs that have transformed the field of biology and medicine in modern times.
- For Familiarity with computational problems and challenges in biology and to apply algorithmic ideas.
- Importantly, to offer students an interesting perspective of how algorithmic/statistical research is done in the field of computational biology and bioinformatics, and thereby inspire them to formulate their own fresh computational problems to address intriguing biological questions.
- To Determine which combination of data and bioinformatics algorithm is appropriate to address a certain biological question
- To Implementing algorithms in real world applications using a programming language.



SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

Department of Bioinformatics &
The Centre for Molecular Data Science and Systems Biology

Bioinformatics Algorithms - A Hands on approach - 2017

CERTIFICATE OF PARTICIPATION

THIS IS TO CERTIFY THAT

KAVIYA PRIYA M

has participated in the Hands on Training workshop on "Bioinformatics Algorithms - A Hands on approach" that was held from the 04th September to October 09, 2017

DR. V. RAMESH KUMAR
CONVENER

DR. JEMMY CHRISTY
HEAD, DEPARTMENT OF BIOINFORMATICS

DR. T. SASIPRABA
VICE CHANCELLOR



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)



Accredited with "A" grade by NAAC
Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600 119, Tamilnadu, India.

School of Bio and Chemical Engineering

Department of Bioinformatics

Date: June 26, 2017

STUDENTS CIRCULAR

Ref No: SIST / Bioinfo / Odd - sem / VAC / June 26, 2017

Dear Students,

This is to inform you that the following courses are being offered to students under the value-added certificate courses category for this academic year. Students belonging to the I year to the III of B. Sc and I and II year of M. Sc are welcome to enroll in these courses. The duration of every course is 30 hours. On completion of the course, you will obtain a certificate of accomplishment.

S. No	Name of the course	Faculty Coordinator
1	Bioinformatics Algorithms - A Hands on approach (September 04 – October 09, 2017)	Dr. Jemmy Christy
2	Microarray Data Analysis - Hands on (November 01 – November 28, 2017)	Dr. Swetha Sunkar
3	NGS Data Analytics – Workshop (January 22 to February 26th, 2018)	Dr. D. Alex Anand.

Venue

Biocomputing Lab, Department of Bioinformatics.

The last date for enrollment is - Closes 07 days before the start of each course.

HOD

Dr. H. Jemmy Christy

HEAD OF THE DEPARTMENT
DEPARTMENT OF BIOINFORMATICS
SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Jeppiaar Nagar, Rajiv Gandhi Salai
Chennai - 600 119

Copy to

School of Bio and Engineering classrooms
Heads of School of Bio and Engineering classrooms



SATHYABAMA

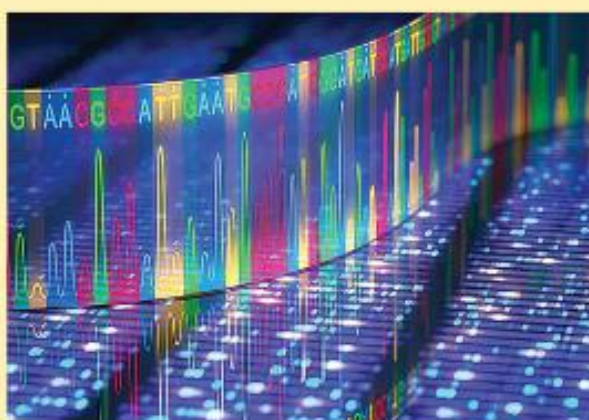
INSTITUTE OF SCIENCE AND TECHNOLOGY
(Deemed to be University)
www.sathyabama.ac.in



Department of Bioinformatics & The Centre for Molecular Data Science and Systems Biology

Presents

MICROARRAY DATA ANALYSIS - 2017



November 01 – November 28, 2017

FACULTY CO - ORDINATOR - DR. SWETHA SUNKAR.



COL. Dr. JEPPIAAR
Founder Chancellor



Dr. Mariazeena Johnson
Chancellor



Dr. Marie Johnson
President

PATRONS

Dr. T. SASIPRABA, M.E., PH.D VICE - CHANCELLOR, SIST
Dr. S. S. RAO, M.B.A., PH.D REGISTRAR, SIST | Dr. E. LOGANATHANMUGAM, M.E., PH.D., PRO VICE CHANCELLOR, SIST

Organizing Members - Dr. Jemmy Christy | Dr. Swetha Sunkar | Dr. D. Alex Anand,
Department of Bioinformatics, SIST

Facilitated by - The Students & Faculty, Department of Bioinformatics & CMDSSB

Microarray Data Analysis - Hands on (November 01 – November 28, 2017)

Days	Date	Topics Covered	Faculty-In-Charge
1-3	01-11-2017 to 03-11-2017	Gene Expression Profiling Analysis	Dr. Alex Anand
4-7	04-11-2017 to 07-11-2017	miRNA Analysis	Dr. Swetha Sunkar
8-11	08-11-2017 to 10-11-2017	Chip-on-Chip Analysis	Dr. Jemmy Christy
12-15	11-11-2017 to 14-11-2017	DNA Methylation Analysis	Dr. Jemmy Christy
16-19	15-11-2017 to 17-11-2017	aCGH / CNV Analysis	Dr. Alex Anand
20-23	18-11-2017 to 21-11-2017	SNP Analysis	Dr. Swetha Sunkar
24-26	22-11-2017 to 24-11-2017	Evaluation	Dr. Jemmy Christy
27-30	25-11-2017 to 28-11-2017	Summary and Valedictory	Dr. Alex Anand

Microarray Data Analysis - Hands on (November 01 – November 28, 2017)

S. No	Name
1.	Manjithra. M
2.	Malik Basha S
3.	Mary Soumiya M
4.	Monika
5.	S R Bharathkumaar
6.	Akshay Kumar
7.	Maulikkumar Thesiya
8.	Shivanjali
9.	S Sinthuja
10.	Priyankaa.B
11.	Mr. Ojasvi Dutta
12.	M.Kaviya Priya
13.	Selvi S
14.	S.Saivarshini
15.	Sathya
16.	Desam Neeharika
17.	Bashyam Praneetha
18.	Ananya Bajpai
19.	Jamalpur Naveen Kumar
20.	Jamalpur Naveen Kumar
21.	Suryani Guha
22.	Swaralipi Mitra
23.	Refana Shahul
24.	Jaisheela Vimali I
25.	Yuganthini. R
26.	Anaswara T S
27.	S.P.Vaishali
28.	Elayaraja Dhandapani
29.	R.Poorvaja
30.	Karthick Raja Arulprakasam
31.	K.Gokilapriyavarthini
32.	Keerthana Sree S
33.	Saranya
34.	M. Fathima
35.	Haripriya J
36.	Dhivyaroopa R
37.	Mohanadevi. S
38.	Fathima. M
39.	Vinesh R

Microarray Data Analysis - Hands on (November 01 – November 28, 2017)

Report

This course is designed to give students an overview of microarray technologies and their applications in the biomedical field, leading to design and analysis of microarray experiments. The course will cover the latest techniques and theories, and is organized around a combination of lecture and practical sessions.

The advent of microarrays in studying gene expression in aging has created tremendous excitement due to its potential for uncovering molecular mechanisms of aging and age-related disease. However, the appropriate implementation of this technology in the science of aging requires serious attention to methodological detail and statistical rigor. The topics discussed by the participants included technical issues relating to the printing of arrays, RNA isolation, cDNA labeling and hybridization, optimal design of microarray experiments, and statistical analysis of these data.



SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

Department of Bioinformatics &
The Centre for Molecular Data Science and Systems Biology

Microarray Data Analysis - Hands on - 2017

CERTIFICATE OF PARTICIPATION

THIS IS TO CERTIFY THAT

SHIVANJALI

has participated in the Hands on Training workshop on "Microarray Data Analysis - Hands on" that was held from the 01st November to the 28th November, 2017.

A handwritten signature in black ink, appearing to read 'V. Ramesh Kumar'.

DR. V. RAMESH KUMAR
CONVENER

A handwritten signature in black ink, appearing to read 'Jemmy Christy'.

DR. JEMMY CHRISTY
HEAD, DEPARTMENT OF BIOINFORMATICS

A handwritten signature in green ink, appearing to read 'T. Sasipraba'.

DR. T. SASIPRABA
VICE CHANCELLOR



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)



Accredited with "A" grade by NAAC
Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600 119, Tamilnadu, India.

School of Bio and Chemical Engineering

Department of Bioinformatics

Date: June 26, 2017

STUDENT CIRCULAR

Ref No: SIST / Bioinfo / Odd - Sem / VAC / June 26, 2017

Dear Students,

This is to inform you that the following courses are being offered to students under the value-added certificate courses category for this academic year. Students belonging to the I year to the III of B. Sc and I and II year of M. Sc are welcome to enroll in these courses. The duration of every course is 30 hours. On completion of the course, you will obtain a certificate of accomplishment.

S. No	Name of the course	Faculty Coordinator
1	Bioinformatics Algorithms - A Hands on approach (September 04 – October 09, 2017)	Dr. Jemmy Christy
2	Microarray Data Analysis - Hands on (November 01 – November 28, 2017)	Dr. Swetha Sunkar
3	NGS Data Analytics – Workshop (January 22 to February 26th, 2018)	Dr. D. Alex Anand.

Venue

Biocomputing Lab, Department of Bioinformatics.

The last date for enrollment is - Closes 07 days before the start of each course.

HOD
Dr. H. Jemmy Christy

Copy to
School of Bio and Engineering classrooms
Heads of School of Bio and Engineering classrooms

HEAD OF THE DEPARTMENT
DEPARTMENT OF BIOINFORMATICS
SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Jeppiaar Nagar, Rajiv Gandhi Salai
Chennai - 600 119



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University)

www.sathyabama.ac.in



Department of Bioinformatics &
The Centre for Molecular Data Science and Systems Biology

Presents

NGS DATA ANALYTICS – WORKSHOP



January 22 to February 26th, 2018

FACULTY Co - ORDINATOR - DR. D. ALEX ANAND.



COL. Dr. JEPPIAAR
Founder Chancellor



Dr. Mariazeena Johnson
Chancellor



Dr. Marie Johnson
President



Mr. J. Arul Selvan
Vice President



Ms. Maria Bernadette
Tamilarasi Johnson
Vice President



Ms. Maria Catherine
Jayapriya
Vice President

PATRONS

Dr. T. SATHYABAMA, M.E., Ph.D. VICE - CHANCELLOR, SIST

Dr. K. S. RAO, M.E., Ph.D. REGISTRAR, SIST | Dr. E. LINGARAJANMUGAM, M.E., Ph.D., PRO VICE CHANCELLOR, SIST

Organizing Members - Dr. Jimmy Christy | Dr. Swetha Sunkar | Dr. D. Alex Anand,
Department of Bioinformatics, SIST

Facilitated by - The Students & Faculty, Department of Bioinformatics & CMDSSB

NGS Data Analytics – Workshop (January 22 to February 26th, 2018)

Days	Date	Topics Covered	Faculty-In-Charge
1-3	01-11-2017 to 03-11-2017	Introduction to Unix/Linux & running workflows	Dr. Alex Anand
4-7	04-11-2017 to 07-11-2017	Introduction to NGS Technologies	Dr. Swetha Sunkar
8-11	08-11-2017 to 10-11-2017	NGS data pre-processing and QC	Dr. Jemmy Christy
12-15	11-11-2017 to 14-11-2017	Alignment to reference sequences	Dr. Jemmy Christy
16-19	15-11-2017 to 17-11-2017	Variant calling and annotation	Dr. Alex Anand
20-23	18-11-2017 to 21-11-2017	ChIPSeq	Dr. Swetha Sunkar
24-26	22-11-2017 to 24-11-2017	RNASeq	Dr. Jemmy Christy
27-30	25-11-2017 to 28-11-2017	Genome assembly	Dr. Alex Anand

NGS Data Analytics – Workshop (January 22 to February 26th, 2018)

S. No	Nam e
1.	Manjithra. M
2.	Malik Basha S
3.	Mary Soumiya M
4.	Monika
5.	S R Bharathkumaar
6.	Akshay Kumar
7.	Maulikkumar Thesiya
8.	Shivanjali
9.	S Sinthuja
10.	Priyankaa.B
11.	Mr. Ojasvi Dutta
12.	M.Kaviya Priya
13.	Selvi S
14.	S.Saivarshini
15.	Sathya
16.	Desam Neeharika
17.	Bashyam Praneetha
18.	Ananya Bajpai
19.	Jamalpur Naveen Kumar
20.	Jamalpur Naveen Kumar
21.	Suryani Guha
22.	Swaralipi Mitra
23.	Refana Shahul
24.	Jaisheela Vimali I
25.	Yuganthini. R
26.	Anaswara T S
27.	S.P.Vaishali
28.	Elayaraja Dhandapani
29.	R.Poorvaja
30.	Karthick Raja Arulprakasam
31.	K.Gokilapriyavarthini
32.	Keerthana Sree S
33.	Saranya
34.	M. Fathima
35.	Haripriya J
36.	Dhivyaroopa R
37.	Mohanadevi. S
38.	Fathima. M
39.	Vinesh R

NGS Data Analytics – Workshop (January 22 to February 26th, 2018)

Report

Next-generation sequencing (NGS) technologies are now a crucial component of practically all life sciences research and diagnostics. NGS data are often processed by qualified bioinformaticians because to their volume and, more importantly, complexity. This is also a serious issue for experienced professionals in life sciences who have never studied NGS because it is too new and must suddenly adapt to completely new tools, workflows, and scientific terminology, not to analyse NGS data themselves (after all, that is why we have bioinformaticians), but to ask the right questions and understand the results.

Our session will teach you the fundamentals of NGS data processing. Its purpose is to teach students how to perform the fundamental processes of NGS data analysis, such as raw data manipulation, quality control, and the elimination of low-quality sequences, sequence adapters, artefacts, or other contamination. The end result should be complete mastery of the process, with the output being a set of high-quality data that can be used for further analysis.

You will become acquainted with numerous NGS data formats, learn about the specific benefits and drawbacks of sequencing technologies and how to cope with them, and gain an understanding of the history of individual techniques used to change NGS data. You will not become a bioinformaticist after this three-day training, but you will be well on your way to being a qualified partner for bioinformaticists on your team.



SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

Department of Bioinformatics &
The Centre for Molecular Data Science and Systems Biology

NGS Data Analytics – Workshop - 2018

CERTIFICATE OF PARTICIPATION

THIS IS TO CERTIFY THAT

S SINTHUJA

has participated in the Hands on Training workshop on NGS Data Analytics
that was held from January 22 to February 26th, 2018.

DR. V. RAMESH KUMAR
CONVENER

DR. JEMMY CHRISTY
HEAD, DEPARTMENT OF BIOINFORMATICS

DR. T. SASIPRABA
VICE CHANCELLOR