

From

The Head of the Department
Department of Botany
MES Keveeyam College, Valanchery

To

The Principal
MES Keveeyam College, Valanchery

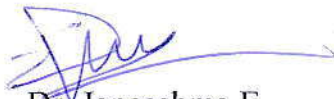
Sir,

Sub: Request for the Approval of Certificate Course

The Department of Botany is planning to conduct a Certificate Course on "Bioinformatics (CC/BOT/23)" of 30 hours duration for the second and third year UG students. So kindly grant permission for the same.

Yours faithfully

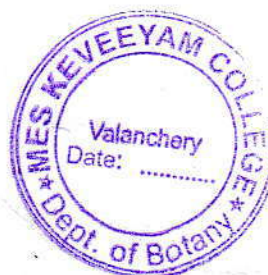
HOD
DEPT OF BOTANY
MES KEVEEYAM COLLEGE
VALANCHERY, 676552
MALAPPURAM DT.


Dr. Janeeshma E.
Assistant Professor
Department of Botany
MES Keveeyam College
Valanchery

11/10/2023
Valanchery



Prof. (Dr.) VINOD KUMAR.K.P
PRINCIPAL
M.E.S KEVEEYAM COLLEGE
VALANCHERY, PIN 676552
MALAPPURAM



From

The Head of the Department
Department of Botany
MES Keveeyam College, Valanchery

To

The Principal
MES Keveeyam College, Valanchery

Sir,

Sub: Request for the Approval of Board of Studies for the short term course

The following academicians may be included in the Board of Studies for the short term course on "Bioinformatics for Beginners (CC/BOT/23)" to be conducted by the department.

1. Dr. Achuthsankar S Nair, Former Professor and Head, Department of Coputational Biology and Bioinformatics, University of Kerala
2. Shefin B, Assistant Professor, Department of Botany, MES Keveeyam College, Valanchery
3. Dr. Krishna Prabha K. S. , Assistant Professor, Department of Zoology, MES Keveeyam College, Valanchery

Kindly do the needful to constitute the Board of Studies with these members.

Yours faithfully,



Dr. Janeeshma E.
Assistant Professor
Department of Botany

HOD
DEPT. OF BOTANY
MES KEVEEYAM COLLEGE
VALANCHERY, 6765
MALAPPURAM D

Place: Valanchery

Date: 11/10/2023



Prof. (Dr.) VINOD KUMAR, K.P.
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MES KEVEEYAM COLLEGE VALANCHERY

P.O.Valanchery, Malappuram Dist, Kerala, Pin:676 552.
Phone : 0494-2642670, 0494 2644380
www.meskeveeyamcollege.ac.in,
principal@meskeveeyamcollege.ac.in

Reaccredited with 'A+' Grade by NAAC (Score 3.44)

Aided by Govt. of Kerala and Affiliated to the University of Calicut
ISO 9001:2015 certified institution

Order No. Acs/2023-24

Date: 14/10/2023

Proceedings of the Principal, MES Keveeyam College Valanchery (Present: Dr. Vinod kumar K.P)

Ref: (1) Request from the Head of the Department of Botany
dt:13/10/23

(2) Minutes of Board of Studies meeting for approval of the syllabus

ORDER

As per reference cited (1), request was received from the HOD, Department of Botany to start a short term course on Bioinformatics for beginners. In the same letter, the head of the department has recommended a panel of academicians to be included in the Board of Studies.

The department of Botany is hereby given sanction to conduct a short term course on Bioinformatics for beginners to the UG students of the college.

The board of studies for the above course is constituted with the following members

1. Dr. Achuthsankar S Nair, Former Professor and Head, Department of Computational Biology and Bioinformatics, University of Kerala,
2. Shefin B, Assistant Professor, Department of Botany, MES Keveeyam College, Valanchery,
3. Dr. Krishna Prabha K. S. , Assistant Professor, Department of Zoology, MES Keveeyam College, Valanchery

Order is issued accordingly.


Dr. Vinod kumar K.P
Principal

Copy to
HOD, Department Botany
File



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MINUTES OF BOARD OF STUDIES MEETING




Venue: Department of Botany Date: 12/10/2023

Agenda: Approval of syllabus of the short term course

Decisions:-

1. Discussions were done on the draft syllabus
2. Suggestions were made to include practical hrs.
3. Elaborated practical session has to be included.
4. Approval can be given to syllabus

Members Present:




1. Dr. Achuthsankar S Nair, Former Professor and Head, Department of Coputational Biology and Bioinformatics, University of Kerala 
2. Shefin B, Assistant Professor, Department of Botany, MES Keveeyam College, Valanchery 
3. Dr. Krishna Prabha K. S. , Assistant Professor, Department of Zoology, MES Keveeyam College, Valanchery 




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Members of Board of Studies for the short term course, Bioinformatics for Beginners, offered by the Department of Botany, MES Keveeyam College, Valanchery.

1. Dr. Achuthsankar S Nair, Former Professor and Head, Department of Computational Biology and Bioinformatics, University of Kerala 
2. Shefin B, Assistant Professor, Department of Botany, MES Keveeyam College, Valanchery 
3. Dr. Krishna Prabha K. S. , Assistant Professor, Department of Zoology, MES Keveeyam College, Valanchery 




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DEPARTMENT OF BOTANY

Bioinformatics for beginners

Welcome to the Bioinformatics Certificate Course – An immersive program designed to equip participants with essential skills and knowledge at the intersection of biology and information technology. In an era where biological data is burgeoning, harnessing the power of computational tools is critical for researchers, scientists, and professionals in the life sciences.

Course Overview: This certificate course is crafted to provide a comprehensive understanding of bioinformatics principles, methodologies, and applications. Participants will delve into the world of databases, and computational techniques essential for unraveling biological complexities.

Key Highlights:

Foundational Concepts: Gain insights into the fundamental principles of bioinformatics, including sequence analysis and structural bioinformatics. **Hands-On Training:** Develop practical skills through hands-on sessions using popular bioinformatics tools and software. **Real-world case studies** will reinforce theoretical concepts, ensuring a well-rounded learning experience. **Application in Research:** Explore how bioinformatics is applied in current research scenarios, enabling participants to bridge the gap between biological experimentation and computational analysis. **Interdisciplinary Approach:** This course is tailored for participants with diverse backgrounds, including biology, computer science, and related fields, fostering a collaborative and interdisciplinary learning environment.

Aim of the Course

- Knowing the game changing area of bioinformatics
- Understanding the applications of bioinformatics
- Understanding databases and how to use it.
- Knowing the types of sequence analysis
- Understanding the relationships between drugs and target proteins
- Be familiar with the modern techniques in the field of drug design such as Computer based methods
- Understanding the need of phylogenetic tree drawing.

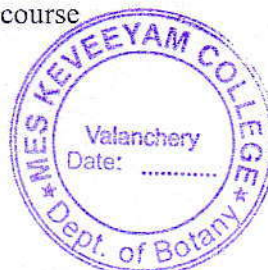
Duration of the Course: 30 Hours

COURSE ASSESSMENT:

Assessment of students was carried out on the basis of internal evaluations which include attendance, assignments, viva, test papers and practical skill during training. Certificates will be issued to students on successful completion of the course

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Bioinformatics for Beginners

SYLLABUS

Fundamentals of Bioinformatics (5 hours)

- Introduction to Bioinformatics
- Applications of Bioinformatics
- Introducing sequence and structure of macromolecules and small molecules

Introduction to Databases (5 hours)

Primary databases:

Nucleotide sequence database: GenBank, DDBJ, EMBL; Protein sequence database: Swissprot/UniProt, PIR, GenePept.

Secondary databases:

Protein structure database: PDB, EBI-MSD, MMDB; Domain and Motif database: Prosite, Blocks, COG.

Derived database:

Structure database: SCOP, CATH; Gene Expression database: GEO, GXD, MGED; Metabolic pathway database: KEGG, PathDB, EMP; Specialized database: TGI, GSOB, GPCRDB.

Other databases: Phospho3D, PPT-DB, Pubmed, Interpro

Small molecule databases: Pubchem, ZINC, ChEMBL, NCI, ChemDB, ChemSpider, BindingDB, PDB-Bind, PDBeChem, KEGG, HMDB, SMPDB, DrugBank, SuperNatural, NPACT.

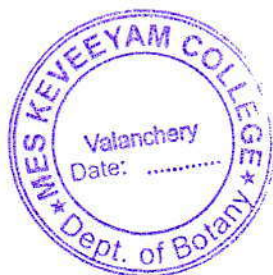
Important Techniques ()

Sequence Alignment (5 hrs)

-Basic concepts of sequence similarity, identity, and homology, homologues, orthologues, paralogues. Database searching: using BLAST, Gaps, Evaluation of results using E-value & Bit score. FASTA.

Computer Aided Drug Design (15 hours)

Introduction to CADD, Various steps – Target identification and validation, Active site identification, Lead identification and molecular docking, Lead validation and optimization, Clinical Trials.



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NAAC RE-ACCREDITED WITH "A+" GRADE (3.44)

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DEPARTMENT OF BOTANY

Organizes

**CERTIFICATE COURSE ON
BIOINFORMATICS FOR BEGINNERS**


















Duration : 30 hrs

Eligibility : UG students

Registration Deadline: 15/12/2023

FOR MORE DETAILS: CONTACT DEPARTMENT OF BOTANY

REGISTERED PARTICIPANTS

Sl. No.	Name of Student	Marks Obtained	Signature.
1.	Dhana. T.E	20	
2.	Fathima. Hiba. T	25	
3.	Fathima. Riya. P.	25	
4.	Hanan.	25	
5.	Shelwa. C.P	24	
6.	Mohammed Nibil. T.K.	22	
7.	Aichuwayya. K.	20	
8.	Andrea. K.	25	
9.	Juzara. K.	25	
10.	Basil K.M.	22	
11.	Fathima Nasha.	25	
12.	Fathima Shafna.	25	
13.	Murshida Shereen Kameel	25	
14.	Rucharna Beere	23	
15.	Vasula. P.P	25	
16.	Muhammed Athiq.	20	
17.	Preshad Babu.	20	
18.	Mohammed Javer. M.P.	—	—
19.	Mohammed Ramez. A.	—	—

Kevin

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2. BIVINFORMATICS FOR BEGINNERS



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KVM-CC-23-24/

Certificate

This is to certify that FATHIMA RIYA P has successfully completed the certificate course on

“ BIOINFORMATICS FOR BEGINNERS ” conducted by the

Department of BOTANY, MES Keveeyam College, Valanchery

during the academic year 2023-24.


Ms. Jameela. M. K

Co-ordinator



Course Facilitator



Prof. Dr. K. P. Vinod Kumar

Principal

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Prof. (Dr.) VINOD KUMAR.K.P
PRINCIPAL
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Certificate

This is to certify that DHANAJAYE has successfully completed the certificate course on

"BIOINFORMATICS FOR BEGINNERS" conducted by the

Department of BOTANY, MES Keveeyam College, Valanchery

during the academic year 2023-24.



Ms. Jameela. M. K
Co-ordinator



Course Facilitator



Head of the Department


Prof. Dr. K. P. Vinod Kumar
Principal



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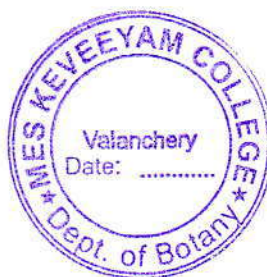
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Timetable for the short term certificate course

Sl.No	Date	Day	Name of the faculty	Time
1.	29/12/2023	Friday	Shefin B.	6-7pm
2.	08/01/2024	Monday	Shefin B.	9:30-11:30am
3.	18/01/2024	Thursday	Shefin B.	7-8pm
4.	19/01/2024	Friday	Shefin B.	7-8pm
5.	06/02/2024	Tuesday	Shefin B.	7-8pm
6.	07/02/2024	Wednesday	Shefin B.	7-8pm
7.	05/03/2024	Tuesday	Shefin B.	8-9pm
8.	06/03/2024	Wednesday	Shefin B.	7-9pm
9.	07/03/2024	Thursday	Shefin B.	9.30-10.30am
10.	08/3/2024	Friday	Shefin B.	7-8pm
11.	09/3/2024	Saturday	Shefin B.	7-8pm
12.	11/3/2024	Monday	Shefin B.	9:30-11:30
13.	12/3/2024	Tuesday	Shefin B.	7-8pm
14.	13/3/2024	Wednesday	Shefin B.	9:30-11:30
15.	14/3/2024	Thursday	Shefin B.	7-8pm
16.	17/3/2024	Sunday	Shefin B.	7-8pm
17.	18/3/2024	Monday	Shefin B.	7-8pm
18.	19/3/2024	Tuesday	Shefin B.	7-8pm
19.	20/3/2024	Wednesday	Shefin B.	7-8pm
20.	21/3/2024	Thursday	Shefin B.	7-8pm
21.	23/3/2024	Saturday	Shefin B.	7-8pm
22.	25/3/2024	Monday	Shefin B.	7-9pm
23.	26/3/2024	Tuesday	Shefin B.	7-9pm
24.	27/3/2024	Wednesday	Shefin B.	9:30-11:30
25.	28/3/2024	Thursday	Shefin B.	7-9pm
26.	30/3/2024	Saturday	Shefin B.	7-9pm

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Name _____

NO	ATTENDED	ANY CLASS
NO	ATTENDED	ANY CLASS
NO	ATTENDED	ANY CLASS
NO	ATTENDED	ANY CLASS

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Name:

Roll. No.....

MES KEVEEYAM COLLEGE VALANCHERY

FOURTH SEMESTER B.SC INTEGRATED BOTANY

CERTIFICATE COURSE IN BIOINFORMATICS EXAMINATION, MARCH 2024

Time: 30mins

Marks : 25

PART A

(Answer all questions; Each carries 1 mark)

1. Name the two anti-cancer compounds present in *Catharanthus roseus*.
2. Write the name of the pain-reliever compound isolated from *Salix alba*.
3. What is the common name of the plant, *Salix alba*.
4. The anti-coagulant compound isolated from *Melilotus albus*.
5. The term *in silico* means
6. The term *in fimo* means
7. The term *in vivo* means
8. The term *in vitro* means
9. Name any five screening milestones.
10. Classical pharmacology is otherwise known as

(1×10=10)

PART B

(Answer all questions; Each question carries 3 marks)

1. What is bioprospecting?
2. What is forward pharmacology?
3. What is gene to drug approach?
4. Explain the central dogma or idea behind bioinformatics.
5. Name the following.
 - a. Scientific name of the plant opium poppy
 - b. Which compound is isolated from the plant?
 - c. What is the use of it?

(3×5=15)

















Kovind

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CERTIFICATES RECEIVED / LIST OF STUDENTS COMPLETED.

Sl. No	Name of Student	Signature
1.	Diana . T.F	
2.	Fathima Hiba . T	
3.	Fathima Rifa . P.	
4.	Hanan	
5.	Shalva . C.P.	
6.	Mohammad Nihil . J. k.	
7.	Archana . k.	
8.	Arslan . k	
9.	Quarosa . k	
10.	Basil . k.M	
11.	Fathima Noor	
12.	Fathima Shafna	
13.	Mushtaq, Shera, Kanyas	
14.	Kadharina Bevi	
15.	Vasila . P.P.	
16.	Mohammad Ashraf	

Keveeyam

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PRINCIPAL
M.E.S KEVEEYAM COLLEGE
VALANCHERY, PIN 676552
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