

VALUE ADDED COURSES

Session 2017-18

Course Name: **Bioinformatics (VAC 204)**



Course Offered by:
Department of Botany

The objective of the program:

To generate interest in the students about the knowledge of bioinformatics and different techniques used in the study of plant.

VALUE ADDED COURSES

Session 2017-18

REGISTRATION FORM

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Name:.....

Enrolment No.....

Program:.....

Sem. & Year.....

Contact No./Mobile:.....

E-mail:.....

Course Opted:.....

Course Code:.....

Signature with date:.....

Contact Person (Course Coordinator)

Dr. Hasrat Ali
KERAL VERMA SUBHARTI COLLEGE OF
SCIENCE
Swami VivekanandSubharti
University (SVSU), Meerut (UP)
Mob. No. 7982331166
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Course Schedule

10.02.18 to 28.02.18

2.00 pm 4.00 pm

Department of Botany

Different Courses of VAC

Course Name: Bioinformatics

Course Code: VAC-104

Objectives: To generate interest in the students about the knowledge of bioinformatics and different techniques used in the study of plant.

Unit 1:

Introduction to Bioinformatics: Introduction, Branches of Bioinformatics, Aim, Scope and Research areas of Bioinformatics. Databases in Bioinformatics: Introduction, Biological Databases, Classification format of Biological Databases, Biological Database Retrieval System.

Unit 2:

Biological Sequence Databases: National Center for Biotechnology Information (NCBI): Tools and Databases of NCBI, Database Retrieval Tool, Sequence Submission to NCBI, Basic local alignment search tool (BLAST), Nucleotide Database, Protein Database, Gene Expression Database. EMBL Nucleotide Sequence Database (EMBL-Bank): Introduction, Sequence Retrieval, Sequence Submission to EMBL, Sequence analysis tools.

Unit 3:

DNA Data Bank of Japan (DDBJ): Introduction, Resources at DDBJ, Data Submission at DDBJ. Protein Information Resource (PIR): About PIR, Resources of PIR, Databases of PIR, Data Retrieval in PIR. Swiss-Prot: Introduction and Salient Features.

Unit 4:

Sequence Alignments : Introduction, Concept of Alignment, Multiple Sequence Alignment (MSA), MSA by CLUSTALW, Scoring Matrices, Percent Accepted Mutation (PAM), Blocks of Amino Acid Substitution Matrix (BLOSUM).

Unit 5:

Molecular Phylogeny: Methods of Phylogeny, Software for Phylogenetic Analyses, Consistency of Molecular Phylogenetic Prediction. Applications of Bioinformatics: Structural Bioinformatics in Drug Discovery, Quantitative structure-activity relationship (QSAR) techniques in Drug Design, Microbial genome applications, Crop improvement.

Course Outcomes: At the end of the course, a student would be able to –

1. Define various terms used in the study of Bioinformatics.
2. Understand the applications of Bioinformatics in Drug discovery and Drug design.
3. Explain the methods used in biological sequence and molecular phylogeny.
4. Demonstrate the process of biological sequence and molecular phylogeny.
5. Discuss about the applications of Bioinformatics in microbial world and crop improvement.


Registrar
Swami Vivekanand
Subharti University
MEERUT



Department of Botany
Keral Verma Subharti College of Science
SWAMI VIVEKANAND SUBHARTI UNIVERSITY

(Established under U.P. Govt. Act no. 29 of 2008 and approved under section 2(f) of UGC Act 1956)
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Date: 06.03.2018

Report on Value Added Course

A value added course on “**Bioinformatics**” was conducted in Botany department for **Final** year students. The course was started from **10-02-2018**. The session was handled by **Dr. Hasrat Ali**, Botany on the need for **Bioinformatics**. On that session students learnt how to do BI properly and effectively and get good yield of silk. Students felt that this value added session on “**Bioinformatics**” was very much informative and useful for them and they got the basic idea for developing their knowledge about how to do bioinformatics by choosing best idea. It is planned to extend this value added training in the next semester with having more refined, advanced and practical knowledge about Bioinformatics field.


(HOD)


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