

Certificate Course I: Basic Bioinformatics with an exposure to Computational Genomics, Molecular Modeling & Drug Design

Code – IICB-BI-01

CSIR-IICB proposes two training courses in Applied Bioinformatics to generate skilled human resources for Bio-IT and Pharmaceutical sectors in Academia & Industry. The courses are targeted to candidates either having a biological background along with an aptitude for computational techniques & programming, or with an IT ground having preliminary exposure to modern biology.

Educational Qualifications	:	B.Sc., B.Tech., B.V.Sc., MBBS for basic course and equivalent
Duration	:	Five weeks [5 days/week excluding Govt. Holidays]
No. of seats	:	12
Age group	:	20 years and above
Date of commencement	:	01.09.2017
Venue of the course	:	CSIR-IICB
Course fee	:	Rs. 25,000/-
Medium of Instruction	:	English

Training Curriculum:

- Introduction to biological databases
- Sequence alignment techniques: pair-wise & multiple sequence alignment
- Phylogenetic analysis for biological sequences
- Computational genomics: gene prediction, pattern searching, profile/motif based searching
- Using genome browsers
- Basic statistics using R
- Introduction to *In-silico* molecular modeling: Energy optimization (different methods), Homology modeling
- *In-silico* Drug designing: Structure based & ligand based drug designing
- Basics of molecular dynamics simulation: molecular dynamics to compute properties of protein structures and their flexibility

CSIR Integrated Skill India Initiative

Certificate Course II : Advanced Bioinformatics with Nextgen sequence analysis.

Code – IICB-BI-02

Educational Qualifications	:	M.Sc.(any branch of Life Sc.), M.Tech (Biotech), M.V.Sc., M.Pharm, MD / MS
Duration	:	Six weeks [5 days/week excluding Govt. Holidays]
No. of seats	:	12
Age group	:	20 years and above (relaxation for SC/ST/OBC as per GOI Rules)
Date of commencement	:	01.09.2017
Venue of the course	:	CSIR-IICB
Course fee	:	Rs. 35,000/
Medium of Instruction	:	English

Training Curriculum :

- An introduction to Sequencing technology and output data types
- Basics of library constructions
- Quality Control of sequenced data and data cleaning for genomic and metagenomic DNA.
- Metagenomic 16S rRNA data analysis for understanding biological diversity.
- Differential expression analysis using RNAseq technology.
- Using genome browsers
- Introduction to the Galaxy suite of tools
- Gene calling and downstream data analysis.

Salient Features of the courses:

- 25% theory and 75% practical sessions are per the course curriculum
- Hand-out information on teaching modules
- Tutorials (personal attention)
- Lectures are assisted with multimedia aids
- Case studies
- Final projects and evaluations

- A certificate will be issued to the successful candidates