

## Bioinformatics Training

NTHRYS provides Bioinformatics Training for interested candidates at its Hyderabad facility, Telangana. Please refer below for more details including Fee structures, Eligibility, Protocols and Modules etc.,. Please do call / message / whatsapp for more details on 9849854748 [India - +91]

### Protocols / Techniques Covered

In the present scenario as the demand for accurate, faster and qualitative research increased, this led to the advent of bioinformatics. Bioinformatics as a tool where errors made can be corrected to open newer approaches in R&D fields. With the advent of Bioinformatics we can develop and carry out research in various areas like nanotechnology, biochemistry, crop research, environmental biotechnology. The basic information of biology one can gain through training in bioinformatics is now a pre-requisite for any life sciences graduate. The recent rise in organism specific genome projects coming up from scientist desks, bioinformatics becomes the foundation to start these projects. It helps to develop research, start new research, maintain and organize the data and decode the results. On a global perspective in order to receive faster results bioinformatics is a necessary tool to embark on a career in life sciences division is bioinformatics.

Bioinformatics Training Program at NTHRYS is provided under three different modules:

#### 1. Basic Bioinformatics Training Module

<b>Module I</b>		
<b>Theory</b>	<b>Practical</b>	<b>Tools</b>
History	Biological Databases	NCBI,MMDB,EMBL,DDBJ,SwissProt
Origin	Structure DB	PDB,CATH,SCOP,InterproScan,Signal Scan
Scope of Bioinformatics	Importance of Tools	N/A
Origin of Tools	Sequence DB's	Scan,Prosite,Prodom, MotifScan,PFam
Sequence File Formats	Types	Genebank file format,FASTA format,EMBL format,UniprotKB/Swiss-Prot format, PIR/NBRF format
<b>Module II</b>		
Application of Bioinformatics	Gene Prediction & Functional Analysis	ORF finder, GeneScan, GeneMark, Webgene

Sequence Comparison	EXPASy, EMBOSS	BLAST, Clustalw, DIALIGN
Structure File Formats	Repeat detection	Repeat Masker, dnadot
General Introduction to Molecular Biology	Hydrophobicity	Protparam
Restriction Site Mapping	Restriction site Detection	Webcutter, NEBCutter
Visualization Software	System Biology Vs /w	RasMol, SPDBV, JMol, Cn3D
Phylogenetic Analysis	Evolutionary Relationship	Phylogeny, HHperd, Biology workbench
Bioinformatics Dogma	Thermodynamics	ProTherm
<b>Minor Project Concerning the concepts learnt</b>		

## 2. Advanced Bioinformatics Training Module

Theory	Practical	Tools
<b>Module III</b>		
Statistical significance of Alignments	RNA sequence Analysis	Expasy
Sequence Databases for similar sequences	RNA fold Recognition	MFOLD, PFOLD
RNA sequence analysis	Secondary Structure Prediction	GOR4, ChouFasman, Predator, Phobious, HMMTOP
RNA structure Prediction	Abinitio Structure Prediction	QUARK, Bhageerath
Submitting Sequence	To NCBI	N/A
Scoring Types	PAM, BLOSUM	N/A
Types of Alignment	Global & Local	Graphics Sequences Pairwise BLAST & EMBOSS Aligns
<b>Module IV</b>		
Molecular Phylogeny Prediction	Molecular evolutionary genetic Analysis	MEGA5, PHYLIP
EST and Gene Discovery		dbEST
Genome Analysis		Genid, FGNEG, GLIMMER, GRAIL
Comparative modeling	Homology Modeling	MODELER, Swiss Model
Fold recognition	Threading	RAPTOR, 3DPSSM, HHPRED
Model Evaluation	Structure Refinement	WHATCHECK, SAVES Server
Structure Validation	RMSD plot	CASP Server
<b>Module V</b>		
Molecular Dynamics	Molecular Simulation	GROMACS, HOOMD blue, PYMOL
Molecular Modeling		CHARM-GUI, Amber
Primer Designing	Three Primer designing tools along with concepts of behind tools	FastPCR, PRIMER3, Gene Fisher
Concepts of Biostatistics, biophysics and biochemistry to help in dealing with databases/tools	Various tools used to useges, of subject with bioinformatics	Risk assessment tools, KinCohort software MultAssoc, Genetic Pathway analysis software
<b>Minor project work in desired topic</b>		
<b>Major project in desired topic</b>		
<p><b>Note:</b> Major project as well as Minor project can also done by the student after selected time and respective certification can be issued on the respective date. For example if a MSc first year student joins in this training module he/she can complete the training module and take Training and take training certificate at the time and later come back after few months continue doing the minor project and then collect the certificate and come later at the time of final year academic project time and do the major project and collect the certificate for the same in respective dates and make use of the three certifications for a single fee structure.</p> <p>This module was designed after considering the advices given by the Bioinformatics Head of the departments of many reputed universities.</p>		

### 3. Professional Bioinformatics Training Module

Theory	Practicals	Tools Used
<b>Module VI</b>		
Reconstruction Of Metabolic Pathway		Various pathway construction tools including KEGG
Pathway Databases		KEGG [all databases ]
Monte Carlo Simulation		Molecular dynamics tools
Docking of Small Molecules	Docking Software	GOLD, HYPERCHEM, AutoDOCK, Hex, Argus Lab
<b>Module VII</b>		
Energy minimization	QSAR Studies	Build QSAR
Geometry Optimization	Descriptor Database	E-Dragon
Force Fields	Primer Designing	Primer3, FastPCR
Descriptors		
BioPERL	BioPERL / PERL programming	
Antibody engineering	Designing and modeling antibodies	
HTML concepts	HTML	
Concepts on designing a bioinformatics database		
Concepts on various biotechnology aspects		
Major project work in any one of the fields present in NTHRYS Bioinformatics Projects section.		

**Note:\*\*\***

Other Trainings under this field >> [Bioinformatics Industrial Training](#), [Bioinformatics Course Finishers Training](#), [Bioinformatics Job Oriented Training](#), & [Bioinformatics Research Training](#)

## Fee Structures for Bioinformatics Training

Fee details in Rs per student									
	Basic Training Modules			Advanced Modules		Professional Modules			
Fee	5 Days	10 Days	20 days	1 Month	45 Days	3 Months	4 Months	5 Months	6 Months
Modules Covered	Module I	Module I & II	Module I, II & Minor Project	Module I, II & III	Module I, II, III, IV & Minor Project	Module I, II, III, IV, V & Major Project	Module I, II, III, IV, V, Minor + Major Project	Module I, II, III, IV, V, VI, VII, Minor + Major Project	Module I, II, III, IV, V, VI, VII, Minor + Major Project [Out of which 1 will be publication project]
Individual	11300	12600	17100	17800	22300	32000	43900	55900	76900
Group 2 - 4	9600	10600	14400	17000	21300	30500	41800	53200	64400
Group 5 - 7	9500	10500	14200	16900	21100	30200	41400	52600	63700
Group 8 - 10	9400	10400	14100	16700	20900	29900	41000	52100	63100



## **NTHRYS REGISTRATION PROCESS**

1. Candidates have to pay **Rs 5000/-** in the below mentioned account to complete Registration Process for selected services.
2. **Registration fee is NOT ADDITIONAL AMOUNT** we will reduce this from the main fee at the time of joining.
3. After completing the fee payment, please scan the payment receipt as well as your college identity card [ Any identity card for student proof] and email it to support@nthrys.com or whatsapp the same to the below given number
4. After receiving this email NTHRYS staff will send you a Registration No, Fee receipt & a Final Confirmation document to confirm the registration. For any additional queries regarding registration process please call / sms / whatsapp on 9849854748.

## **NTHRYS Account Information**

Account Name: NTHRYS BIOTECH LABS

Account No: 400800301000092

Bank Name: Vijaya Bank

West Marredpalli Branch - Secunderabad, Andhra Pradesh, India

Branch Under RTGS: Yes

Branch Under NEFT: Yes

RTGS - IFSC Code: VIJB0004008