

Days	Name	Durations	Category	Main Category
1	Introduction to National Center of Biotechnology Information (NCBI)	18:01	NCBI	Bioinformatics Databases
1	Sequence Analysis	17:59	NCBI	Bioinformatics Databases
2	Sequence Retrieval from NCBI	16:16	NCBI	Bioinformatics Databases
2	PubMed Central & ENTREZ	11:06	NCBI	Bioinformatics Databases
3	FASTA (Sequence Format)	6:13	Sequence Format	Bioinformatics File Formats
3	GenBank: Nucleotide Database on NCBI	6:50	NCBI	Bioinformatics Databases
4	GenBank (Sequence Annotation Format)	7:08	Sequence Format	Bioinformatics File Formats
4	FASTA vs. GenBank	18:26	NCBI	Bioinformatics Databases
5	Gene Database: A Comprehensive Gene Database	30:21:00	NCBI	Bioinformatics Databases
5	NCBI Genomes & NCBI Assembly: Retrieval of Genomes	36:14:00	NCBI	Bioinformatics Databases
6	FASTQ Format	18:01	Sequence Format	Bioinformatics File Formats
6	Gene File Format/Gene Transfer Format	11:06	Sequence Format	Bioinformatics File Formats
7	BED (Gene Structure Format)	4:26	Sequence Format	Bioinformatics File Formats
7	SAM	9:06	Sequence Format	Bioinformatics File Formats
8	BAM	9:06	Sequence Format	Bioinformatics File Formats
8	RefSeq Database: Retrieval of Single Reference Sequences	11:15	NCBI	Bioinformatics Databases
9	BLAST Database Searching	25:36:00	NCBI	Bioinformatics Databases
9	Introduction to Molecular Modeling Database (MMDB)	8:06	NCBI	Bioinformatics Databases
10	Database of Short Genetic Variations (dbSNP)	12:16	NCBI	Bioinformatics Databases
10	HomoloGene: Discovery of Gene and Protein Families	6:10	NCBI	Bioinformatics Databases
11	Taxonomy	9:56	NCBI	Bioinformatics Databases
11	Introduction to UCSC Genome Browser & SARS-CoV-2 Viral Genome	13:40	UCSC	Bioinformatics Databases
12	Retrieve an Entire Genome & Retrieval of SARS-CoV-2 Viral Genome	9:40	UCSC	Bioinformatics Databases
12	Retrieval of Genomic Data & Annotation of SARS-CoV-2 Viral Genome	5:29	UCSC	Bioinformatics Databases
13	Table Browser & SARS-CoV-2 Viral Genome	12:15	UCSC	Bioinformatics Databases

13	Visualization of Genomic Data on the Genome Browser & SARS-CoV-2 Genome	10:51	UCSC	Bioinformatics Databases
14	Introduction to UniProt	9:56	UniProt	Protein Databases & Analysis
14	UniProtKB & Protein Analysis	39:29:00	UniProt	Protein Databases & Analysis
15	UniProteome & Retrieval of an Entire Proteome	13:05	UniProt	Protein Databases & Analysis
15	UniProt BLAST - Database Searching	12:32	UniProt	Protein Databases & Analysis
16	ID Mapping & Making Analysis Easier	7:17	UniProt	Protein Databases & Analysis
16	UniProt Peptide Search - Find Regions Within UniProt Database	3:15	UniProt	Protein Databases & Analysis
17	Introduction to Protein Data Bank (PDB)	6:44	PDB	Protein Databases & Analysis
17	Accurately Searching for a Protein Structure on PDB & Protein Analysis	13:55	PDB	Protein Databases & Analysis
18	Biological Annotation and Protein Features View & Analysis	8:18	PDB	Protein Databases & Analysis
18	Browsing PDB According to Annotation	6:52	PDB	Protein Databases & Analysis
19	Digging Out Categorized & Specific Protein Structures from PDB Archives	6:23	PDB	Protein Databases & Analysis
19	Alignment Between Two PDB Sequences & Structures	6:07	PDB	Protein Databases & Analysis
20	3D Structure Visualization on PDB	10:49	PDB	Protein Databases & Analysis
20	Mapping Genomic Position to Protein Sequence and 3D Structure	4:34	PDB	Protein Databases & Analysis
21	Genomic Discovery of Protein Structure Through Gene	4:07	PDB	Protein Databases & Analysis
21	PDB - Protein Symmetry	2:34	PDB	Protein Databases & Analysis
22	Introduction to ENSEMBL	7:49	ENSEMBL	Bioinformatics Databases
22	Retrieval of a Gene-Protein-Chromosomal Region	18:01	ENSEMBL	Bioinformatics Databases
23	Genome Assembly Retrieval and Analysis	10:23	ENSEMBL	Bioinformatics Databases
23	Gene Analysis & Annotation	34:40:00	ENSEMBL	Bioinformatics Databases
24	Variation Analysis	24:36:00	ENSEMBL	Bioinformatics Databases
24	ENSEMBL BLAST/BLAT	15:08	ENSEMBL	Bioinformatics Databases
25	Regulation - Understand the Influence of Regulatory Elements on Genes	4:18	ENSEMBL	Bioinformatics Databases
25	Comparative Genomics Analysis	5:34	ENSEMBL	Bioinformatics Databases

26	Introduction to InterPro	4:10	InterPro	Protein Databases & Analysis
26	InterPro - Protein Family Classification and Analysis	14:35	InterPro	Protein Databases & Analysis
27	InterPro - Protein & Protein Domain Analysis	9:29	InterPro	Protein Databases & Analysis
27	Introducton to Phytozome	9:38	Phytozome	Bioinformatics Databases
28	Interpret Plant Genome Records	9:06	Phytozome	Bioinformatics Databases
28	Download an Entire Plant Genome & Proteome	26:41:00	Phytozome	Bioinformatics Databases
29	Keyword or BLAST Search in a Plant Genome	15:58	Phytozome	Bioinformatics Databases
29	Visualize a Plant Genome Using JBrowse	17:38	Phytozome	Bioinformatics Databases
30	UniProt Align - Pairwise & Multiple Sequence Alignment and Annotation	3:47	UniProt	Protein Databases & Analysis
30	EMBOSS NEEDLE: Global Alignment of Sequences	20:02	Pairwise Sequence Alignment & Analysis	Sequence Alignment & Analysis
31	EMBOSS Water	9:10	Pairwise Sequence Alignment & Analysis	Sequence Alignment & Analysis
31	Clustal Omega: Most Reliable Multiple Sequence Alignment Tool	19:18	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
32	Clustal Omega Alignment Format	5:07	Alignment Format	Bioinformatics File Formats
32	Jalview	13:42	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
33	T-Coffee: Iterative Multiple Sequence Alignment Tool	8:37	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
33	MUSCLE: Accurate Multiple Sequence Alignment Tool	21:07	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
34	MEGA - Multiple Sequence Alignment	4:23	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
34	MEGA (Alignment Format)	5:32	Alignment Format	Bioinformatics File Formats
35	MAFFT - Fastest Multiple Sequence Alignment Tool	8:22	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
35	PHYLIP - Multiple Sequence Alignment Format	4:34	Alignment Format	Bioinformatics File Formats
36	Stockholm Alignment Format	3:10	Alignment Format	Bioinformatics File Formats
36	Aln2Plot	2:30	Sequence Analysis	Sequence Alignment & Analysis
37	MEGA	21:20	Phylogenetic Analysis	Phylogenetic Analysis

37	iTOL: Creating Publishable Phylogenetic Figures	13:42	Phylogenetic Tree Visualization & Analysis	Phylogenetic Analysis
38	FigTree	21:26	Phylogenetic Tree Visualization & Analysis	Phylogenetic Analysis
38	Quick2D	4:33	Secondary Structure Prediction	Secondary Structure Prediction
39	Ali2D	4:09	Secondary Structure Prediction	Secondary Structure Prediction
39	Jpred: Prediction Secondary Structure of the Proteins	4:54	Secondary Structure Prediction	Secondary Structure Prediction
40	HHrepID	5:15	Secondary Structure Prediction	Secondary Structure Prediction
40	DeepCoil	3:22	Secondary Structure Prediction	Secondary Structure Prediction
41	REPPER - Predict Gapless Repeats in Proteins	2:25	Secondary Structure Prediction	Secondary Structure Prediction
41	HMMER - Hidden Markov Model Based Protein Profiles Database	13:16	Protein Analysis	Protein Databases & Analysis
42	SignalP: Prediction of Signal Peptides	7:57	Protein Analysis	Protein Databases & Analysis
42	TargetP: Prediction of Protein Localization	9:21	Protein Analysis	Protein Databases & Analysis
43	Pfam - Understand the Relation of a Protein to its Family and Clan	15:55	Protein Family Database	Protein Databases & Analysis
43	PROSITE - A Database of Protein Domian, Families and Functional Sites	13:46	Protein Family Database	Protein Databases & Analysis
44	ScanProsite - Scanning Protein for Important Protein Sites Against PROSITE Database	7:36	Motif & Domain Analysis	Protein Databases & Analysis
44	Marcoil - Predict Coiled Coil Domains in Proteins	4:05	Motif & Domain Analysis	Protein Databases & Analysis
45	SMART	6:44	Motif & Domain Analysis	Protein Databases & Analysis
45	PDB - Ligands	5:23	PDB	Protein Databases & Analysis
46	MODELLER: Most Commonly Used Homology Modelling	36:13:00	3D Structure Prediction	3D Structure Prediction
46	SwissModel: Homology Modeling Through Web-server	12:52	3D Structure Prediction	3D Structure Prediction

47	HHPred	14:09	3D Structure Prediction	3D Structure Prediction
47	M4T	9:26	3D Structure Prediction	3D Structure Prediction
48	IntFold	8:41	3D Structure Prediction	3D Structure Prediction
48	ROBETTA: ab initio Protein Structure Prediction	14:39	3D Structure Prediction	3D Structure Prediction
49	Homology Modeling Using MOE	12:34	3D Structure Prediction	3D Structure Prediction
49	PEPFOLD 3 Peptide Structure Prediction	13:14	3D Structure Prediction	3D Structure Prediction
50	UCSF CHIMERA	25:23:00	3D Structure Visualization	3D Structure Visualization
50	PyMol	40:48:00	3D Structure Visualization	3D Structure Visualization
51	WhatCheck	8:40	3D Structure Evaluation	3D Structure Evaluation
51	ProCheck	12:40	3D Structure Evaluation	3D Structure Evaluation
52	ERRAT	6:44	3D Structure Evaluation	3D Structure Evaluation
52	Verify3D	8:31	3D Structure Evaluation	3D Structure Evaluation
53	RAMPAGE	3:29	3D Structure Evaluation	3D Structure Evaluation
53	SAVES	5:31	3D Structure Evaluation	3D Structure Evaluation
54	PROSA	10:05	3D Structure Evaluation	3D Structure Evaluation
54	MOE: Protein Ligand Docking	9:23	Molecular Docking	Molecular Docking
55	MOE: Protein Protein Docking	11:38	Molecular Docking	Molecular Docking
55	SwissDock Protein Ligand Docking	19:16	Molecular Docking	Molecular Docking
56	Autodock Vina Protein Ligand Docking	Not Yet Available	Molecular Docking	Molecular Docking
56	MOE: Structure Based Drug Designing	16:19	Molecular Docking	Molecular Docking
57	MOE: Docking Library of Compounds	19:48	Molecular Docking	Molecular Docking

57	ClusPro Protein Protein Docking	21:44	Molecular Docking	Molecular Docking
58	Patchdock Protein Protein Docking	17:39	Molecular Docking	Molecular Docking
58	Zdock Protein Protein/Ligand docking	19:35	Molecular Docking	Molecular Docking
59	MDockPEP Protein Peptide Docking	10:06	Molecular Docking	Molecular Docking
59	Discovery Studio+	12:03	Molecular Docking	Molecular Docking
60	PDBsum Docking Complex Evaluation	18:49	Docking Complex Evaluation	Docking Complex Evaluation
60	Pdbepisa Docking Complex Evaluation	23:27	Docking Complex Evaluation	Docking Complex Evaluation
61	SwissADME	15:31	Docking Complex Evaluation	Docking Complex Evaluation
61	GeneMark: Gene Prediction from Eukaryotic Genomes	16:51	Gene Prediction	Gene Prediction
62	Prodigal: Gene Prediction from Microbial Genomes	25:46:00	Gene Prediction	Gene Prediction
62	GenScan - Prediction of Genes from Green Monkey and Finding a Novel Gene	10:40	Gene Prediction	Gene Prediction
63	AUGUSTUS - Prediction of Novel Genes in Star Fish or Any Genome	17:27	Gene Prediction	Gene Prediction
63	UniRef And Retrieve Protein Clusters	11:35	UniProt	Protein Databases & Analysis
64	UniParc And Find the Non-Redundant Entries	4:38	UniProt	Protein Databases & Analysis
64	Genome Reference Consortium (GRC)	7:48	NCBI	Bioinformatics Databases
65	BioProject	6:39	NCBI	Bioinformatics Databases
65	BioSystems	4:16	NCBI	Bioinformatics Databases
66	BioSample	2:56	NCBI	Bioinformatics Databases
66	Sequence Read Archive (SRA)	7:14	NCBI	Bioinformatics Databases
67	Introduction to Gene Expression Omnibus Database	9:15	NCBI	Bioinformatics Databases
67	Gene Expression Omnibus - Platforms	5:42	NCBI	Bioinformatics Databases
68	Gene Expression Omnibus - Samples	4:15	NCBI	Bioinformatics Databases
68	Gene Expression Omnibus - Series	4:00	NCBI	Bioinformatics Databases
69	Gene Expression Omnibus - Datasets	4:44	NCBI	Bioinformatics Databases
69	STRING: Comprehensive Protein-Protein Interaction Database	13:16	PPI Database	PPI Database
70	Gene Structure Display Server 2.0	8:35	Genomics Tools	Genomics Tools

70	Getting Started With Molecular Dynamics Simulation - Pre-processing of Protein Structure and Removal of Unnecessary Structural Features	12:33	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
71	pdb2gmx - Construction of Topology File for Simulation	9:00	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
71	Defining a Solvant Box for Simulation	4:14	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
72	Solvation - Adding Water Molecules in Solvant Box	5:30	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
72	Generating Input Run File Replacement of Water Molecules With Ions	6:55	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
73	genion - Replacement of Water Molecules With Ions	4:18	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
73	Energy Minimization - Relaxing and Fixing the Structure for Simulation	11:25	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
74	GRACE - Visualization and Analysis of Minimized Structure	4:11	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
74	Equibiliration of Protein Structure NVT ENSEMBLE Phase 1	8:37	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
75	Equibiliration of Protein Structure NPT ENSEMBLE Phase 2	8:09	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
75	mdrun - Executing Simulation Analysis	3:46	Molecular Dynamics Simulations: GROMACS	Molecular Dynamics Simulation
76	Virulence Factor Database		Vaccine Development	Drug Designing & Discovery
76	Database of Essential Genes		Vaccine Development	Drug Designing & Discovery
77	Drug Databank		Vaccine Development	Drug Designing & Discovery
77	Sortaller		Vaccine Development	Drug Designing & Discovery
78	Algpred		Vaccine Development	Drug Designing & Discovery
78	Allertop		Vaccine Development	Drug Designing & Discovery
79	Vaxijen		Vaccine Development	Drug Designing & Discovery
80	Antigenpro		Vaccine Development	Drug Designing & Discovery
80	CD-HIT		Vaccine Development	Drug Designing & Discovery
81	Netct11.2		Vaccine Development	Drug Designing & Discovery
81	MHC I		Vaccine Development	Drug Designing & Discovery
82	MHC II		Vaccine Development	Drug Designing & Discovery

82	Netmhc II	Vaccine Development	Drug Designing & Discovery
83	Galaxy Refine	Vaccine Development	Drug Designing & Discovery
83	Modrefiner	Vaccine Development	Drug Designing & Discovery
84	IEDB Conservancy	Vaccine Development	Drug Designing & Discovery
84	IEDB Immunogenicity	Vaccine Development	Drug Designing & Discovery
85	Toxinpred	Vaccine Development	Drug Designing & Discovery
85	Elliprosuite	Vaccine Development	Drug Designing & Discovery
86	Doscotope2.0	Vaccine Development	Drug Designing & Discovery
86	BCpreds	Vaccine Development	Drug Designing & Discovery
87	Bepipred	Vaccine Development	Drug Designing & Discovery
87	ABCpred	Vaccine Development	Drug Designing & Discovery
88	Cofactor	Vaccine Development	Drug Designing & Discovery
88	Castp	Vaccine Development	Drug Designing & Discovery
89	C-Immsim	Vaccine Development	Drug Designing & Discovery
89	Jcat	Vaccine Development	Drug Designing & Discovery
90	IFNepitope	Vaccine Development	Drug Designing & Discovery
90	Maestro	Vaccine Development	Drug Designing & Discovery
91	SnapGene	Vaccine Development	Drug Designing & Discovery
91	DNASTAR	Vaccine Development	Drug Designing & Discovery
92	CLC Sequence Viewer	Vaccine Development	Drug Designing & Discovery