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	Gene File Format/Gene Transfer Format	11:06	Sequence Format	Bioinformatics File Formats
6	BED (Gene Structure Format)	4:26	Sequence Format	Bioinformatics File Formats
7	SAM	9:06	Sequence Format	Bioinformatics File Formats
7	BAM	9:06	Sequence Format	Bioinformatics File Formats
8	RefSeq Database: Retrieval of Single Reference Sequences	11:15	NCBI	Bioinformatics Databases
8	BLAST Database Searching	25:36:00	NCBI	Bioinformatics Databases
9	Introduction to Molecular Modeling Database (MMDB)	8:06	NCBI	Bioinformatics Databases
9	Database of Short Genetic Variations (dbSNP)	12:16	NCBI	Bioinformatics Databases
10	HomoloGene: Discovery of Gene and Protein Families	6:10	NCBI	Bioinformatics Databases
10	Taxonomy	9:56	NCBI	Bioinformatics Databases
11	Introduction to UCSC Genome Browser & SARS-CoV-2 Viral Genome	13:40	UCSC	Bioinformatics Databases

11	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
12	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
13	Introduction to UniProt	9:56	UniProt	Protein Databases & Analysis
14	UniProtKB & Protein Analysis	39:29:00	UniProt	Protein Databases & Analysis
14	UniProteome & Retreieval of an Entire Proteome	13:05	UniProt	Protein Databases & Analysis
15	ID Mapping & Making Analysis Easier	7:17	UniProt	Protein Databases & Analysis
15	Introduction to Protein Data Bank (PDB)	6:44	PDB	Protein Databases & Analysis
16	Accurately Searching for a Protein Structure on PDB & Protein Analysis	13:55	PDB	Protein Databases & Analysis
16	Biological Annotation and Protein Features View & Analysis	8:18	PDB	Protein Databases & Analysis

17	Browsing PDB According to Annotation	6:52	PDB	Protein Databases & Analysis
17	Digging Out Categorized & Specific Protein Structures from PDB Archives	6:23	PDB	Protein Databases & Analysis
18	Alignment Between Two PDB Sequences & Structures	6:07	PDB	Protein Databases & Analysis
18	Introduction to ENSEMBL	7:49	ENSEMBL	Bioinformatics Databases
19	Retrieval of a Gene-Protein-Chromosomal Region	18:01	ENSEMBL	Bioinformatics Databases
19	Genome Assembly Retrieval and Analysis	10:23	ENSEMBL	Bioinformatics Databases
20	Gene Analysis & Annotation	34:40:00	ENSEMBL	Bioinformatics Databases
20	Variation Analysis	24:36:00	ENSEMBL	Bioinformatics Databases
21	ENSEMBL BLAST/BLAT	15:08	ENSEMBL	Bioinformatics Databases
21	Regulation - Understand the Influence of Regulatory Elements on Genes	4:18	ENSEMBL	Bioinformatics Databases
22	Comparative Genomics Analysis	5:34	ENSEMBL	Bioinformatics Databases

22	Introduction to InterPro	4:10	InterPro	Protein Databases & Analysis
23	InterPro - Protein Family Classifcation and Analysis	14:35	InterPro	Protein Databases & Analysis
23	InterPro - Protein & Protein Domain Analysis	9:29	InterPro	Protein Databases & Analysis
24	Introducton to Phytozome	9:38	Phytozome	Bioinformatics Databases
24	Interpret Plant Genome Records	9:06	Phytozome	Bioinformatics Databases
25	Download an Entire Plant Genome & Proteome	26:41:00	Phytozome	Bioinformatics Databases
25	Keyword or BLAST Search in a Plant Genome	15:58	Phytozome	Bioinformatics Databases
26	Visualize a Plant Genome Using JBrowse	17:38	Phytozome	Bioinformatics Databases
26	EMBOSS NEEDLE: Global Alignment of Sequences	20:02	Pairwise Sequence Alignment & Analysis	Sequence Alignment & Analysis
27	EMBOSS Water	9:10	Pairwise Sequence Alignment & Analysis	Sequence Alignment & Analysis
27	Clustal Omega: Most Reliable Multiple Sequnce Alignment Tool	19:18	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis

28	Clustal Omega Alignment Format	5:07	Alignment Format	Bioinformatics File Formats
28	Jalview	13:42	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
29	T-Coffee: Iterative Multiple Sequence Alignment Tool	8:37	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
29	MUSCLE: Accurate Multiple Sequence Alignment Tool	21:07	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
30	MEGA - Multiple Sequence Alignment	4:23	Multiple Sequence Alignment & Analysis	Sequence Alignment & Analysis
30	MEGA (Alignment Format)	5:32	Alignment Format	Bioinformatics File Formats
31	iTOL: Creating Publishable Phylogenetic Figures	13:42	Phylogenetic Tree Visualization & Analysis	Phylogenetic Analysis
31	FigTree	21:26	Phylogenetic Tree Visualization & Analysis	Phylogenetic Analysis
32	Quick2D	4:33	Secondary Structure Prediction	Secondary Structure Prediction
32	Ali2D	4:09	Secondary Structure Prediction	Secondary Structure Prediction
33	Jpred: Prediction Secondary Structure of the Proteins	4:54	Secondary Structure Prediction	Secondary Structure Prediction

33	HMMER - Hidden Markov Model Based Protein Profiles Database	13:16	Protein Analysis	Protein Databases & Analysis
34	SignalP: Prediction of Signal Peptides	7:57	Protein Analysis	Protein Databases & Analysis
34	TargetP: Prediction of Protein Localization	9:21	Protein Analysis	Protein Databases & Analysis
35	Pfam - Understand the Relation of a Protein to its Family and Clan	15:55	Protein Family Database	Protein Databases & Analysis
35	PROSITE - A Database of Protein Domian, Families and Functional Sites	13:46	Protein Family Database	Protein Databases & Analysis
36	ScanProsite - Scanning Protein for Important Protein Sites Against PROSITE Database	7:36	Motif & Domain Analysis	Protein Databases & Analysis
36	MODELLER: Most Commonly Used Homology Modelling	36:13:00	3D Structure Prediction	3D Structure Prediction
37	SwissModel: Homology Modeling Through Web-server	12:52	3D Structure Prediction	3D Structure Prediction
37	HHPred	14:09	3D Structure Prediction	3D Structure Prediction
38	M4T	9:26	3D Structure Prediction	3D Structure Prediction
38	IntFold	8:41	3D Structure Prediction	3D Structure Prediction

39	ROBETTA: ab initio Protein Structure Prediciton	14:39	3D Structure Prediction	3D Structure Prediction
39	Homology Modeling Using MOE	12:34	3D Structure Prediction	3D Structure Prediction
40	UCSF CHIMERA	25:23:00	3D Structure Visualization	3D Structure Visualization
40	PyMol	40:48:00	3D Structure Visualization	3D Structure Visualization
41	WhatCheck	8:40	3D Structure Evaluation	3D Structure Evaluation
41	ProCheck	12:40	3D Structure Evaluation	3D Structure Evaluation
42	ERRAT	6:44	3D Structure Evaluation	3D Structure Evaluation
42	Verify3D	8:31	3D Structure Evaluation	3D Structure Evaluation
43	RAMPAGE	3:29	3D Structure Evaluation	3D Structure Evaluation
43	SAVES	5:31	3D Structure Evaluation	3D Structure Evaluation
44	PROSA	10:05	3D Structure Evaluation	3D Structure Evaluation

44	GeneMark: Gene Prediction from Eukaryotic Genomes	16:51	Gene Prediction	Gene Prediction
45	Prodigal: Gene Prediction from Microbial Genomes	25:46:00	Gene Prediction	Gene Prediction
45	GenScan - Prediction of Genes from Green Monkey and Finding a Novel Gene	10:40	Gene Prediction	Gene Prediction
46	Genome Reference Consortium (GRC)	7:48	NCBI	Bioinformatics Databases
46	BioProject	6:39	NCBI	Bioinformatics Databases
47	BioSystems	4:16	NCBI	Bioinformatics Databases
47	BioSample	2:56	NCBI	Bioinformatics Databases
48	Sequence Read Archive (SRA)	7:14	NCBI	Bioinformatics Databases
48	Introduction to Gene Expression Omnibus Database	9:15	NCBI	Bioinformatics Databases
49	Gene Expression Omnibus - Platforms	5:42	NCBI	Bioinformatics Databases
49	Gene Expression Omnibus - Samples	4:15	NCBI	Bioinformatics Databases

50	Gene Expression Omnibus - Series	4:00	NCBI	Bioinformatics Databases
50	Gene Expression Omnibus - Datasets	4:44	NCBI	Bioinformatics Databases
51	STRING: Comprehensive Protein-Protein Interaction Database	13:16	PPI Database	PPI Database
51	Gene Structure Display Server 2.0	8:35	Genomics Tools	Genomics Tools
52	Introduction to Python and it's Intallation	8:25	Introduction	Python
52	Comments	5:42	Introduction	Python
53	Basic Input and output	15:37	Introduction	Python
53	Mathematical Operations	7:20	Introduction	Python
54	Strings	21:51	Iterable Objects	Python
54	Dictionaries	10:57	Iterable Objects	Python
55	Lists	28:47:00	Iterable Objects	Python

55	Tuples	10:37:00	Iterable Objects	Python
56	Sets	7:35	Iterable Objects	Python
56	If-Else	9:19	Control Flow	Python
57	For Loop and Calculation of Molecular Weight of Proteins	10:56	Control Flow	Python
57	While Loop and Biological Data Analysis	9:37	Control Flow	Python
58	CSV (A special kind of file in Bioinformatics)	31:47:00	File Handling	Python
58	Reading Files	13:45	File Handling	Python
59	Writing Files	8:41	File Handling	Python
59	Consolidate(merge) multiple DNA and Protein Sequences into one FASTA file	7:17	File Handling	Python
60	OS	9:24	File Handling	Python
60	Functions	26:41:00	Functions & Modules	Python

61	With	8:50	Functions & Modules	Python
61	Error Handling	15:31	Error Handling	Python
62	Introduction to R in Bioinformatics & R Installation	9:47	Introduction	R
62	The R Studio Interface Explanation	6:23	Introduction	R
63	Comments	4:16	Introduction	R
63	Sample & Replacement	9:09	Variables & Functions	R
64	Variable Declaration and Objects	5:24	Variables & Functions	R
64	Built-in Functions & ARGS	4:31	Variables & Functions	R
65	Write Your Own Functions And Arguments	5:39	Variables & Functions	R
65	Scripts	7:36	Variables & Functions	R
66	Attributes and Names	4:46	Vectors & Data Types	R

66	Characters	4:43	Vectors & Data Types	R
67	Doubles	3:30	Vectors & Data Types	R
67	Logicals	2:27	Vectors & Data Types	R
68	Factors	6:40	Vectors & Data Types	R
68	Atomic Vectors	2:42	Vectors & Data Types	R
69	Integers	3:23	Vectors & Data Types	R
69	Dim & Dimensions	5:46	Vectors & Data Types	R
70	Coercion	4:27	Vectors & Data Types	R
70	Lists	6:41	Vectors & Data Types	R
71	Matrix & Matrices	4:42	Vectors & Data Types	R
71	Arrays	3:42	Vectors & Data Types	R

72	Class	3:12	Vectors & Data Types	R
72	Packages	4:00	Packages	R
73	Getting Help with Help Packages	3:42	Packages	R
73	Install Bioinformatics Packages	5:25	Packages	R
74	Library & Initialization of Packages	2:27	Packages	R
74	Loading Biological Data	7:55	Biological Data Analysis	R
75	Zero Notation for Subsetting Biological Datasets	1:09	Biological Data Analysis	R
75	Saving Biological Data	5:26	Biological Data Analysis	R
76	R Notation & Selecting Values from Biological Dataset	4:09	Biological Data Analysis	R
76	Data Frames	6:30	Biological Data Analysis	R
77	Positive Integers for Subsetting Biological Dataset	5:25	Biological Data Analysis	R

77	Negative Integers for Subsetting Biological Dataset	5:28	Biological Data Analysis	R
78	Dollar Signs for Biological Dataset Subsetting	2:58	Biological Data Analysis	R
78	Blank Spaces For Biological Data Subsetting	3:20	Biological Data Analysis	R
79	Modifying Values in Existing Datasets	7:06	Biological Data Analysis	R
79	NA Values in Biological Dataset	5:24	Biological Data Analysis	R
80	Figuring out NA Values in Biological Dataset	2:06	Biological Data Analysis	R
80	Logical Subsetting in Biological Datasets	9:45	Biological Data Analysis	R
81	If Else Statement	4:15	Control Flow	R
81	For Loops & Biological Data Binding	16:30	Control Flow	R
82	While Loops & Reading Multiple Biological Datasets	16:16	Control Flow	R