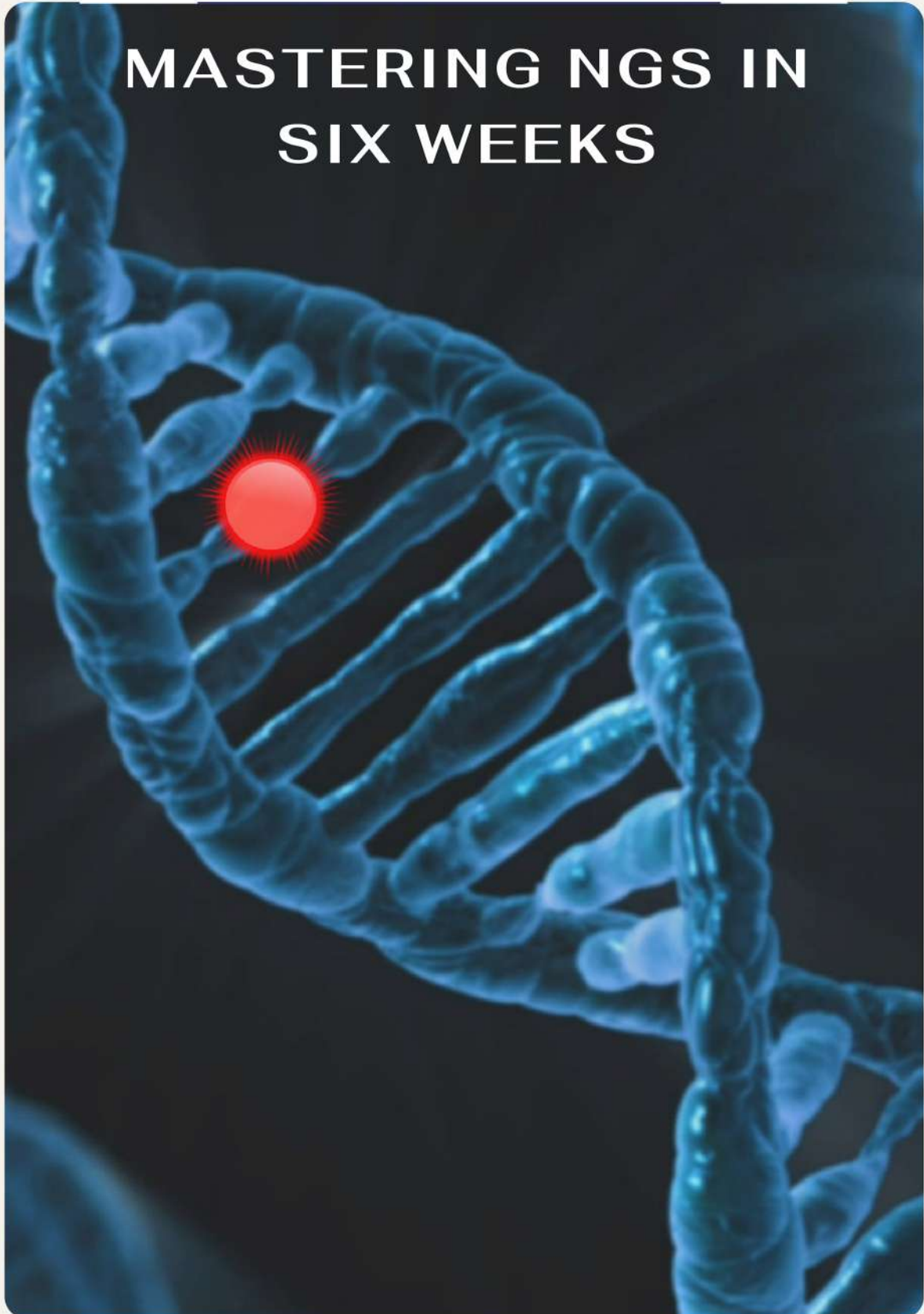




Dr.Omics Labs
The Doctor of your DNA

FROM DNA TO DATA

MASTERING NGS IN SIX WEEKS



- Hands-on Online Live Training
- Research Publication Guidance
- HR guidance
- Industrial experts as faculty

YOUR GO TO

WITH DR.OMICS LABS

COMPREHENSIVE AND SPECIALIZED TRAINING

- MODULES COVERING KEY AREAS OF COMPUTATIONAL RESEARCH.
- HIGHLY PROFESSIONAL COURSES FOR NEXT GENERATION SEQUENCING DATA ANALYSIS TECHNIQUES & PROGRAMMING FROM BASICS



EXPOSURE

- INDUSTRY PRACTICES AND INSIGHTS INTO THE COMMERCIAL ASPECTS OF BIOTECH RESEARCH
- AN INDUSTRIAL LEVEL COURSE DESIGN.
- COVERING EVERY TOPIC REQUIRED FOR BEING A BIOINFORMATICIAN & PROVIDING HANDS-ON PRACTICE DURING SESSION



MENTORSHIP

- BENEFIT FROM THE GUIDANCE OF EXPERIENCED GENETICISTS AND BIOINFORMATICIANS.
- LIVE LEARNING WITH HANDS-ON PRACTICAL EXPERIENCE, UNDERSTANDING USAGE OF BIOINFORMATICS DATABASES IN REAL-TIME.
- CREATION OF PIPELINES, DATA SORTING, TRIMMING AND CLEANING STUDIES.



NETWORKING

- CONNECT WITH PEERS, INDUSTRY PROFESSIONALS, AND POTENTIAL COLLABORATORS.
- A COLLABORATIVE AND INTERACTIVE LEARNING ENVIRONMENT THAT FOSTERS CREATIVITY AND INNOVATION.



Next-Gen Sequencing Research Oriented Course

"Explore the forefront of genomics and bioinformatics with our NGS Research Oriented Course at Dr.Omics labs. Gain hands-on expertise in next-generation sequencing techniques and data analysis, propelling your career or research to new heights in the field of genomics."



Important tip

Study at your own pace with 24/7 access to course materials, allowing you to balance your studies with your other commitments.

- Global Accessibility: Learn from anywhere in the world.
 - Research-Oriented Curriculum: Taught by leading experts.
 - Unravel the Genome: Master DNA sequencing techniques and data analysis.
 - Certification: Receive a prestigious certificate upon completion.
 - Career Advancement: Open new job opportunities in genetics, biotechnology, and healthcare.
-



Coursework Overview (Modules)

1. Basics of Bioinformatics & Databases
Linux and its application in NGS
—————
2. R Programming and introduction to
Bioconductor
—————
3. RNA Sequencing (Reference based)

Module 1: Basics of Bioinformatics & Databases , LINUX and its Application in NGS

1.1) Basics of Bioinformatics & databases

- Defining & Understanding Bioinformatics
- Introduction to genomic bioinformatics
- Learning Databases (GenBank, PubMed, KEGG, Clinvar, UCSC, Uniprot, PDB)
- Understanding Bioinformatics Tools (BLAST, Stand-alone BLAST, Mega)
- Introduction to the Linux system
- Bridge the gap between biotechnology and bioinformatics

1.2) LINUX and its application in NGS

- Linux overview and significance
- File and directory operations (create, copy, move, delete)
- Text file editing and creation
- Process management (introduction and termination)
- Basic networking and ownership overview
- Conclusion and further resources



Module 2: R Programming and introduction to Bioconductor

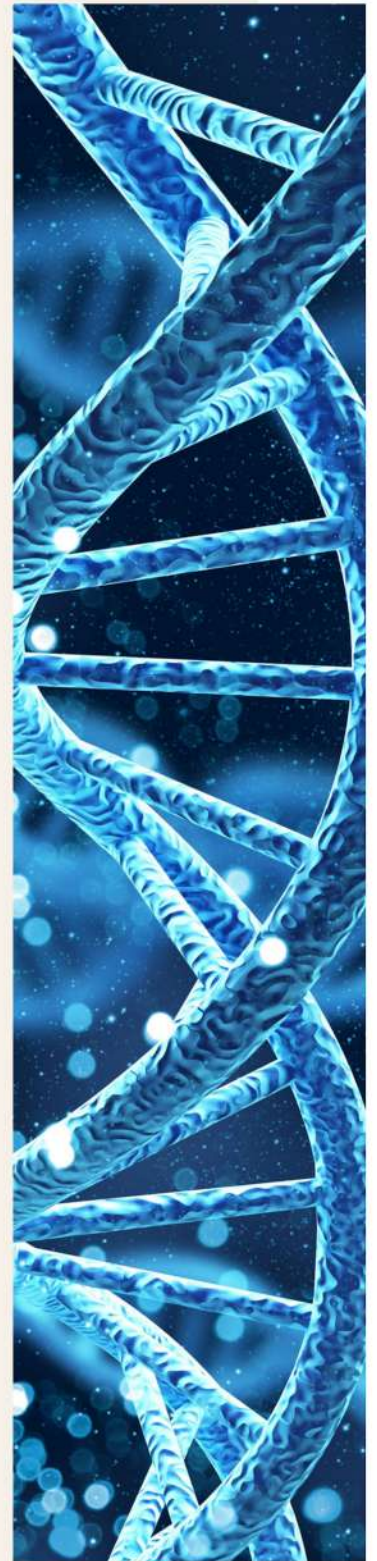
2.1) R Programming

- Introduction to the R language
- Importance of R in Bioinformatics
- Installation of R
- Installation of IDE (R studio)
- Print, cut, and paste functions
- Comments
- Variables
- Data types
- Functions of math
- Operators
- Installation of packages
- String formatting
- Learning Control Statements (if -else, while loop, break, etc.)
- R Data Structures (Lists, Vectors, Arrays, etc)
- File Handling & User-Defined Functions



2.2) Introduction to Bioconductor

- Bioconductor package installation
- Sequence analysis
- Basics of seqinr package
- Import and export FASTA sequences
- Reverse complement
- GC content
- Retrieving GenBank and fasta files from NCBI
- Statistical study for Analysis (z-test, t-test, etc)
- Plot generation for data visualization (box plot, PCA plot, Heatmap, Volcano Plot)



Module 3: RNA Sequencing (Reference based)

- Introduction to RNA Seq
- Necessary Tools installation
- Learn how Data Retrieval is done
- Quality Check of reads using FASTQC, FastP
- Trimming and cleaning of data using Cutadapt
- Understanding mapping of reads on reference genome and file formats (SAM, BAM) with Hisat2
- Visualization techniques
- Gene Expression Quantification & Analyzation
- Pathway & Gene ontology enrichment analysis using StringTie, DESeq2
- Pathway Network analysis using KEGG





Program Structure

- Duration: 6 Weeks

From Theory to Practice: Bridging the Gap in Genomic Research

- **Comprehensive NGS Training:** Understand NGS fundamentals, data generation, and quality control.
 - **Bioinformatics Tools and Resources:** Master NGS analysis tools and explore essential genomic databases.
 - **Real-world Projects:** Engage in genome assembly, variant calling, and functional annotation projects.
 - **Professional Development:** Enhance your resume and gain mentorship from experienced professionals.
 - **Certification:** Upon successful completion, receive a prestigious NGS Research Course certificate.
-

Frequently Asked Questions

Q: Are these courses suitable for those new to the field without prior experience?

A: Yes, our courses are designed to cater to beginners with no prior experience in the field. We provide foundational content suitable for all skill levels.

Q: Will I receive a certification upon completing the course?

A: Absolutely, a digital certificate will be awarded upon course completion. You'll receive this certificate via email.

Q: Do the courses include practical projects and research opportunities?

A: Certainly, our courses incorporate practical projects and research opportunities to ensure hands-on learning and the practical application of acquired knowledge.

Q: Can I access class recordings if I miss a class?

A: Yes, class recordings are available. We'll send you the recording link via email if you miss a class, typically on the day following the live session.

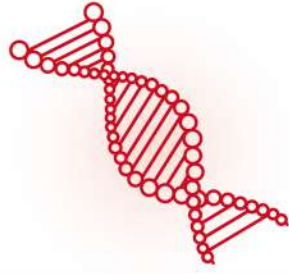
Q: Can I continue to access course materials and resources after finishing the course?

A: Absolutely, you'll retain access to course materials and resources even after completing the course. These materials will be shared with you via email or WhatsApp.



Terms and Conditions


- **Maintaining Discipline during the Tenure.**
 - **It is mandatory to maintain 85% attendance for all students.**
 - **Students must maintain an average 'A2' grade throughout their training period.**
 - **Project completion is a must for research.**
 - **Publication Students must participate actively in the Project group**
-



NEED MORE INSIGHT & SUPPORT?

CONTACT US!

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Thank you!



Dr.Omics Labs
The Doctor of your DNA

OUR CERTIFICATIONS & GRANTS

