Bvᵾrsity

IITM PRAVARTAK
CATALYSING INNOVATION

Bioinformatics, Genomics & Data Science

6-month PG Programme · Hybrid classes

Become an **industry-ready bioinformatics professional** in 6 months



Who it's for

Who this programme is for

MSc and B.Tech graduates

You already know the biology. Add the data skills analyst teams hire for, and apply for analyst roles with a portfolio to show.

BSc graduates

You don't need another two-year degree to work in bioinformatics. Six months of hands-on work prepares you for analyst roles.

Working professionals

In QC, a lab or pharmacovigilance? Keep your job, learn at the weekend, and move into a computational role where your experience counts.

Our promise to you

Attend the live classes, finish your projects and apply to the roles we put forward with you, and we keep supporting your job search until you're placed.

Careers

The jobs our learners go on to do

Roles you apply for

The roles this programme trains you for.

₹5.5 LPA
average salary

- Bioinformatics analyst
- Genomics data analyst
- Genome analyst (NGS)
- AI/ML bioengineer

₹14 LPA

Our highest package so far: a fresher, placed straight from the programme as an AI/ML bioengineer.

Where it leads, as you gain experience

Senior bioinformatician, computational biologist, and AI and ML scientist in drug discovery and precision medicine.

Where the jobs are

Pharma companies, genomics labs and CROs, working on cancer genomics, drug discovery and precision medicine.

Why now

Genomics is moving into hospitals and drug pipelines, and teams need people who understand both the biology and the data.

Ready? Submit your CV to apply.

apply.bversity.io · WhatsApp +91 78451 33745

Placements

Learners we've placed

150+

learners placed

50+

hiring partners in pharma, biotech and genomics



Dristi Mohta

→ Bioinformatician, Thinkhat

I knew the biology, but not what to do with a raw dataset. The projects taught me that, and they were what my interviewers asked about.



Arpita Ganguly

→ Bioinformatics Engineer, Semantic Web Tech

Moving from the lab to code felt like starting over. It wasn't: my lab years helped me read the data, and the programme gave me the tools.



Laxmi Manojkumar

→ Bioinformatician Trainee, Boltzmann

After my degree I didn't know where to start. Now I do the same work I practised in the programme.

Where our learners work

Thinkhat · Semantic Web Tech · Mandrake Bio · CRISPR BITS · boltzmann

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How it works

How the six months are laid out

1–4
months

Learn and build

Six blocks, in order, each ending with hands-on work on real patient genomic data. Live classes at the weekend, recordings through the week.

1. Foundations
2. Applied genomics and NGS
3. Biostatistics
4. Biological networks
5. Multi-omics and systems biology
6. AI and ML for biological data

5–6
months

Capstone, portfolio and interviews

An end-to-end capstone project, a CV and portfolio review, mock interviews, and then applying to the roles we put forward with you.

What you build

The projects you'll take to interviews

Project 1

An NGS variant-calling pipeline

Take raw sequencing reads through quality control, alignment and variant calling, the way clinical genomics labs do.

GATK, Linux, Nextflow

Project 2

An RNA-seq expression study

Find which genes change between two conditions, and explain what that means biologically.

R, Python

Project 3

A machine-learning model on omics data

Train and test a model that predicts a biological outcome from omics data.

Python, PyTorch, TensorFlow

Project 4

Your capstone

Your own end-to-end project, from framing the question to a final report you can show recruiters.

Your choice of tools

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Curriculum

What you'll **study**

Each block adds a skill analyst roles ask for, so by month 6 you can do the day-to-day work of a bioinformatics analyst. The next pages list every module.

1 **Foundations** Biological data, databases, Python and R

Handle real biological data in Python and R.

2 **Applied genomics and NGS** Sequencing, NGS pipelines, RNA-seq, variant calling

Run an NGS pipeline from raw reads to variants and expression.

3 **Biostatistics** Inference, ANOVA, regression, survival analysis

Pick and run the right statistical test for a biological question.

4 **Biological networks** Pathways, protein interactions, Cytoscape

Build and read gene and protein networks.

5 **Multi-omics and systems biology** Proteomics, metabolomics, biomarkers

Combine genomic, proteomic and metabolomic data into one view.

6 **AI and ML for biological data** Machine learning, neural networks, Nextflow pipelines

Build, run and monitor a predictive model on omics data.

+ **Capstone**

One end-to-end project of your own, ready for your portfolio.

Curriculum, module by module

1 Foundations

Handle real biological data in Python and R.

Module 1

Basics of biological data

- Understand omics data types and how they are generated
- Navigate biological databases and how they are classified
- Retrieve and integrate data from public and specialised databases

Module 2

Biological databases and omics resources

- Explore public and specialised databases used in real workflows
- Retrieve data efficiently from biological databases
- Understand how databases connect and how data integration works

Module 3

Core computing for bioinformatics

- Set up Python and R for bioinformatics work
- Learn syntax, code organisation and essential data structures
- Build the programming base every later subject depends on

Module 4

Python and R for biological data

- Apply Python to real biological data problems
- Run exploratory analysis on biological datasets
- Create clear data visualisations in R

2 Applied genomics and NGS

Run an NGS pipeline from raw reads to variants and expression.

Module 1

Sequencing technologies and study design

- How modern NGS and Illumina platforms work
- WGS, exome and targeted sequencing compared
- Match the sequencing choice to the experimental design

Module 2

Step-by-step pipelines for NGS data

- Run NGS analysis from raw data through quality assessment
- Understand what happens at each pipeline stage, and why
- Build and interpret genomic workflows the way industry does

Module 3

RNA-seq and gene expression

- Understand transcriptomics and how RNA-seq works
- Design RNA-seq experiments and process the data correctly
- Interpret gene expression results in biological context

Module 4

Finding and interpreting genomic variants

- Apply GATK best practices to call variants
- Connect viral variants and population genetics
- Learn how GWAS studies are designed and read

Curriculum, module by module

3 Biostatistics

Pick and run the right statistical test for a biological question.

Module 1

Probability and inference

- Probability distributions applied to biological data
- Hypothesis testing to compare biological groups

Module 2

ANOVA and non-parametric tests

- ANOVA to compare biological groups
- Non-parametric tests when standard assumptions are unmet

Module 3

Regression models

- Build and interpret linear and logistic regression
- Select models for biological questions
- Run diagnostic checks on model assumptions

Module 4

Survival analysis, multivariate methods and ML

- Survival analysis for time-to-event data
- Multivariate methods and cluster analysis
- Machine learning concepts and introductory predictive models

4 Biological networks

Build and read gene and protein networks.

Module 1

Biological networks and pathways

- Structure and function of protein interaction networks
- Protein–DNA interactions and signalling networks
- Link network shape to biological function and disease

Module 2

Building, visualising and exploring networks

- Build networks with several construction methods
- Visualise and explore them in Cytoscape
- Use heatmaps for complex biological relationships

Module 3

Dynamic systems and disease networks

- Model biological systems with differential equations
- Bayesian inference for network uncertainty
- A real ovarian cancer network case study

Curriculum, module by module

5 Multi-omics and systems biology

Combine genomic, proteomic and metabolomic data into one view.

Module 1

Genomics and transcriptomics

- Process NGS data and run differential expression
- Connect transcriptomics to the wider omics
- Interpret genomic and transcriptomic results together

Module 2

Proteomics, metabolomics and their data

- How mass spectrometry data is produced and processed
- Metabolomics techniques and analysis
- Connect proteomic and metabolomic layers to the genome

Module 3

Biomarkers, integration and disease

- Find biomarker signals across omics layers
- Integrate multi-omics datasets
- Use predictive AI models in systems biology

6 AI and ML for biological data

Build, run and monitor a predictive model on omics data.

Module 1

Introduction to AI and ML

- Machine learning foundations, including regression
- How neural networks learn from biological data
- Apply AI and ML to biological problems

Module 2

Building and running AI pipelines

- End-to-end pipelines in Nextflow
- CI/CD and API inference for deploying models
- Monitor model performance in production

Module 3

Computing environments and data handling

- Work in Linux for biological data science
- Manage files and wrangle datasets
- Keep code organised with version control

Tools

Software you'll use every week

These are the tools bioinformatics analyst job posts ask for. By month 6 each one is on your CV, with a project that shows you can use it. 15+ tools in all.



Mentors

The people teaching you

Each mentor works in the field you're moving into, so they teach to the job and review your projects the way a hiring manager would.

Apoorva Mishra



Lead Data Scientist, Theomics

Naina Goel



Senior Data Scientist, UCAN

Uma Chauhan



Bioinformatician, NGS and machine learning

Bhavana Krishnan



Bioinformatics Data Engineer, Semantic Web Tech

Manisha Bhardwaj



Builds proteomics apps, CRISPR Bits

Berty Ashley



Building a therapy for DMD, Hanugen Therapeutics

A note from our co-founder

Why we built this programme

Every year I meet life science graduates who know their biology well and still can't find work that uses it. Labs want people who can handle data, and data teams want people who understand biology. Very few courses teach both, and fewer still teach them the way the work is actually done.

We built this programme to close that gap. You work on real data from the first block, someone who does this job for a living reviews your projects, and we stay with you through the job search, not only through the classes.

Six months is a real commitment, and ₹1 lakh is not a small amount. I want you to know exactly what you are getting before you decide. If this brochure leaves a question unanswered, ask our admissions team, or come to a Bversity Saturdays session and ask us live.





Raghul J
Co-founder and Chief Academic Officer,
Bversity School of Bioscience

Certificate

The IIT Madras Pravartak certificate

An optional add-on for ₹25,000. Issued by IIT Madras Pravartak Technologies Foundation, IIT Madras's technology innovation hub, together with Bversity School of Bioscience. It is a certificate, not an IIT Madras degree.



Sample certificate

Hiring partners

Companies that hire our learners

Pharma, biotech, genomics and CRO companies we work with on placements.

MEDGENOME · 4baseCare · AGILISIUM Insights. Humanity. Impact. · Genotypic genomics simplified

LifeCell · Biotage · XCODE LIFE · Clevergene

Labgene biotech · SciGenom · THEOMICS END YOUR SEARCH · Thinkhat

Semantic Web Tech Connect. Learn. Infer · MANDRAKE BIO · CRISPR BITS · boltzmann

AMURA HEALTH · azooka · ADIUVO DIAGNOSTICS · BioCompin

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Fee

Fees and payment

Programme fee
6 months, live weekend classes, four portfolio projects, mentors and placement assistance.

₹1,00,000
inclusive of GST

IIT Madras Pravartak certificate
Optional. Issued by IIT Madras Pravartak, IIT Madras's technology innovation hub. It is a certificate, not an IIT Madras degree.

+₹25,000
inclusive of GST

EMI
Through a third-party lender; any arrangement with them is outside Bversity's purview.

Available
monthly instalments

Batches
A new batch starts every month, so you start soon after your CV is accepted.

Monthly

Our promise: Attend the live classes, finish your projects and apply to the roles we put forward with you, and we keep supporting your job search until you're placed.

Apply

How to apply

1

Submit your CV

We read every CV ourselves and get back to you with the next step.

2

Onboard

Pay the fee or set up EMI, and start with the next monthly batch.

Not ready to apply yet?

Join a free Bversity Saturdays session, live every Saturday from 7 to 8 PM IST. You'll hear which life science roles pay more and how people move into them, and you can ask anything about the programme.

Talk to admissions

+91 78451 33745 · +91 96001 87536
admission@bversity.io
bversity.io

Scan to apply

Bversity

Empowering **next-gen** biotechnologists

Six months of hands-on work on real genomic data, mentors from industry, and placement assistance into analyst roles.

Start your application

apply.bversity.io

To know more about admissions, call **+91 78451 33745** or **+91 96001 87536** or write to **admission@bversity.io**



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