



SAARTHI • सारथी

करियर मार्गदर्शन पोर्टल • Career Guidance Portal

"सही मार्गदर्शन, उज्ज्वल भविष्य।"

करियर शीट • CAREER SHEET

बायोटेक्नोलॉजी इंजीनियर

Biotechnology engineers use living cells and technology to develop medicines, vaccines, better crops and industrial products. India's bio-economy has grown rapidly since the COVID vaccines.



Scan for everything on this career

Salary, exams, colleges, the routes in and the steps after — all on the portal.

career.gsssjethantri.in/#/career/eng-4605

राजकीय उच्च माध्यमिक विद्यालय, जेठन्तरी

Govt. Sr. Sec. School, Jethantri • ब्लॉक समदड़ी • बालोतरा (Block Samdari • Balotra)

www.gsssjethantri.in • career.gsssjethantri.in



सुशील कुमार शर्मा

प्रधानाचार्य, रा.उ.मा.वि. जेठन्तरी • मास्टर ट्रेनर
Principal, GSSS Jethantri • Master Trainer



श्री चेनाराम चौधरी

प्रधानाचार्य, डाइट बाड़मेर
Principal, DIET Barmer



श्रीमती संघमित्रा

वरिष्ठ व्याख्याता, डाइट बाड़मेर (सहयोग)
Sr. Lecturer, DIET Barmer (Support)



भरत चौधरी

अभिकल्पना व विकास • व्याख्याता (इतिहास)
Designed & developed • Lecturer (History)

विशेष धन्यवाद • SPECIAL THANKS



सुरेन्द्र सिंह राठौड़

व्याख्याता (इतिहास) • रा.उ.मा.वि. कानाना



सुरेश कुमार सैन

व्याख्याता (भूगोल) • रा.उ.मा.वि. रामसीन मूंगड़ा



वनिता कुमारी

व्याख्याता (इतिहास) • रा.उ.मा.वि. रामसीन मूंगड़ा



कमलेश चौधरी

व्याख्याता (राजनीति विज्ञान) • रा.उ.मा.वि. टापरा

करियर मार्गदर्शन कार्यशाला, डाइट बाड़मेर (14-17 जुलाई 2026) में विकसित व लोकार्पित
Developed & unveiled at the Career Guidance Workshop, DIET Barmer (14-17 July 2026)

यह एक स्वतंत्र परियोजना है, जो सरकार की आधिकारिक करियर-मार्गदर्शन सामग्री पर आधारित है। • An independent project based on the Government's official career-guidance content.

1 About this career

Biotechnology engineers use living cells and technology to develop medicines, vaccines, better crops and industrial products. India's bio-economy has grown rapidly since the COVID vaccines.

2 At a glance

Minimum qualification	12th (PCB/PCM) + B.Tech/B.Sc in Biotechnology
Work mode	Mostly laboratory and research
Demand	Growing - in vaccines, pharma and agri-biotech
Top earning	Senior scientist/lab director: Rs 2 lakh+/month

3 What you need

INTERESTS

- Interest in biology and experiments
- Solving society's problems
- Curiosity to discover new things

ABILITIES

- Scientific and analytical thinking
- Attention to detail
- Patience - experiments run long

KEY SKILLS

- Grasp of microbiology and genetics
- Bioprocess and fermentation
- Scientific writing and documentation
- Lab techniques (PCR, culturing)
- Data analysis and bioinformatics
- Quality standards (GMP)

4 How to get there

- 1 Pass 10+2 in science with Biology/Maths.

- 2 Do B.Tech or B.Sc in Biotechnology via JEE/REAP/CUET.
- 3 Gain lab internship and project experience.
- 4 Do M.Tech/M.Sc via GATE/CUET-PG.
- 5 Choose a PhD for research or a job in a pharma-biotech company.

MAIN EXAMS

- JEE Main / JEE Advanced
- REAP (Rajasthan)
- CUET (UG/PG)
- GATE (Biotechnology)

5 Where to study

GOVERNMENT INSTITUTES

- University of Rajasthan — Jaipur, Rajasthan (<https://www.uniraj.ac.in>)
- MLSU (University College of Science) — Udaipur, Rajasthan (<https://www.mlsu.ac.in>)
- IIT Roorkee — Roorkee, Uttarakhand
- IIT Kharagpur — Kharagpur, West Bengal

PRIVATE INSTITUTES

- BITS Pilani — Pilani, Rajasthan (<https://www.bits-pilani.ac.in>)
- Manipal University Jaipur — Jaipur, Rajasthan (<https://jaipur.manipal.edu>)
- Amity University Jaipur — Jaipur, Rajasthan

ONLINE

- NPTEL/SWAYAM (Biotechnology courses) — Online (<https://nptel.ac.in>)

FEES

About Rs 5,000-50,000 per year in government institutes; Rs 1-3 lakh per year in private ones, varies by institute.

SCHOLARSHIPS

- National Scholarship Portal (<https://scholarships.gov.in>)
- Vidya Lakshmi Education Loan Portal (<https://www.vidyalakshmi.co.in>)
- Buddy4Study (<https://www.buddy4study.com>)

6 What the work is like

WHERE YOU WORK

Pharma-vaccine companies, research labs, agri-biotech and food companies, medical device manufacturing.

WORK CULTURE

Mostly intensive research in labs, working with teams of engineers and technicians. Opportunities exist for persons with disabilities.

WHO HIRES

- Bharat Biotech / Serum Institute
- CSIR/DBT research labs
- Food processing companies
- Pharma firms like Biocon / Dr. Reddy's
- Agri-biotech and seed companies
- Biotech startups

DEMAND (2026)

India's bio-economy targets 300 billion dollars by 2030; opportunities in vaccines, bio-pharma and green biotech are rising in 2026.

7 Career growth

- 1 Research Technician
- 2 Research Scientist
- 3 Team Lead
- 4 Laboratory Manager
- 5 Laboratory Director

EARNINGS

Starting	₹18,000-35,000
Mid level	₹45,000-90,000
Senior level	₹1,20,000-2,50,000+

Monthly pay, 2026 levels; varies with higher studies and company, indicative.

8 The good parts · The challenges

The good parts

- Discoveries useful to society
- Fast-growing bio-economy sector
- Diverse paths from research to industry

The challenges

- M.Sc/PhD often needed for good pay
- Relatively low starting salary
- Experiments demand long hours and patience

9 Real-life journeys

Dr. Krishna Ella

Founder, Bharat Biotech (Covaxin)

Born to a Tamil Nadu farming family, Krishna Ella chose science over farming and returned from the US to start Bharat Biotech. His company built Covaxin, India's first indigenous COVID vaccine.

The Better India · <https://thebetterindia.com/231767/tamil-farmers-son-india-first-covid-19-vaccine-bharat-biotech-genome-valley-hyderabad-se-r106/>

Shreya Verma

Genomics Scientist, Illumina

After studying biotechnology at a Bengaluru college, Shreya did research at IISc and a PhD in Finland. Today she is a scientist at Illumina, the world's leading genomics company.

The Interview Portal · <https://theinterviewportal.com/2025/12/08/genomics-scientist-interview/>

10 If this route does not work out

One exam or one attempt does not close the door. The same subjects also open these routes — entry is usually easier, and you can return to this field later.

- Civil Engineer
- Agricultural Engineer
- Aeronautical Engineer

11 Sources & further reading

1. Rajasthan Career Guidance: Biotechnology Engineer — <https://cg.rajasthan.gov.in/careerguidance/hi/career/%e0%a4%ac%e0%a4%be%e0%a4%af%e0%a5%8b%e0%a4%9f%e0%a5%87%e0%a4%95%e0%a5%8d%e0%a4%a8%e0%a5%8b%e0%a4%b2%e0%a5%89%e0%a4%9c%e0%a5%80-%e0%a4%9c%e0%a5%88%e0%a4%b5%e0%a4%aa%e0%a5%8d%e0%a4%b0%e0%a5%8c%e0%a4%a6/>
2. AICTE — <https://www.aicte-india.org>
3. NPTEL (free online courses) — <https://nptel.ac.in>
4. National Career Service (NCS) — <https://www.ncs.gov.in>



And 770+ more careers — the whole portal

Interest and aptitude tests, government jobs, skill courses and a CV builder — free, no login, and it works offline.

career.gsssjethantri.in