



SAARTHI - सारथी

करियर मार्गदर्शन पोर्टल · Career Guidance Portal

"सही मार्गदर्शन, उज्ज्वल भविष्य।"

करियर शीट · CAREER SHEET

इंजीनियरिंग भौतिक विज्ञानी

Engineering physicists turn physics principles into technology - semiconductors, lasers, quantum tech and space systems. It blends research with engineering.



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-4616

राजकीय उच्च माध्यमिक विद्यालय, जेठन्तरी

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

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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

Engineering physicists turn physics principles into technology - semiconductors, lasers, quantum tech and space systems. It blends research with engineering.

2 At a glance

Minimum qualification	12th PCM + B.Tech (Engineering Physics)/BSc-MSc
Work mode	Labs, research centres and office
Demand	Rising - in quantum, semiconductors and space missions
Top earning	Senior scientist/R&D head: Rs 2-2.5 lakh+/month

3 What you need

INTERESTS

- Deep interest in maths and science
- Experimenting and discovering
- Curiosity about how things work

ABILITIES

- Curious, research-minded nature
- Patience and focus
- Solving complex problems

KEY SKILLS

- Advanced maths and physics
- Programming and simulation (Python, MATLAB)
- Understanding of electronics and materials science
- Laboratory and instrumentation skills
- Data analysis
- Scientific writing and presentation

4 How to get there

- 1 Pass 10+2 with Physics, Chemistry, Maths.
- 2 Do B.Tech (Engineering Physics) via JEE, or choose BSc (Physics).
- 3 Pursue MSc/M.Tech via IIT JAM/JEST.
- 4 Do research internships and projects (ISRO, DRDO, IISc).
- 5 Start a career with a PhD or in industry R&D labs.

MAIN EXAMS

- JEE Main / JEE Advanced
- IIT JAM (MSc)
- JEST / GATE (Physics)
- CSIR-UGC NET

5 Where to study

GOVERNMENT INSTITUTES

- IIT Jodhpur — Jodhpur, Rajasthan (<https://iitj.ac.in>)
- MNIT Jaipur (Physics Dept) — Jaipur, Rajasthan (<https://www.mnit.ac.in>)
- IIT Bombay (Engineering Physics) — Mumbai, Maharashtra
- IIT Delhi (Engineering Physics) — New Delhi
- Delhi Technological University (DTU) — New Delhi
- IIT Madras — Chennai, Tamil Nadu

PRIVATE INSTITUTES

- BITS Pilani (MSc Physics) — Pilani, Rajasthan
- Bennett University — Greater Noida, Uttar Pradesh
- Chandigarh University — Mohali, Punjab

ONLINE

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

FEES

Full course about Rs 1-4 lakh in government institutes; Rs 2.5-8 lakh in private. The BSc-MSc route is cheaper; 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>)
- INSPIRE Scholarship (DST) (<https://www.online-inspire.gov.in>)

6 What the work is like

WHERE YOU WORK

Research labs, universities, space-nuclear-defence institutes, semiconductor and telecom industry, IT R&D.

WORK CULTURE

Mostly full-time lab and office work; sometimes over 40 hours a week. Opportunities exist for persons with disabilities.

WHO HIRES

- | | |
|---|---|
| • ISRO / DRDO / BARC | • CSIR labs and universities |
| • Semiconductor companies (Tata Electronics etc.) | • Quantum and deep-tech startups |
| • Telecom and aerospace industry | • Foreign research institutes (CERN etc.) |

DEMAND (2026)

In 2026, programmes like the National Quantum Mission, Semiconductor Mission and Gaganyaan are driving demand for research-skilled physicists.

7 Career growth

- 1 Research fellow
- 2 Research scientist
- 3 Senior scientist
- 4 R&D manager / professor

EARNINGS

Starting	₹25,000-50,000
Mid level	₹60,000-1,20,000
Senior level	₹1,50,000-2,50,000+

Monthly pay; varies widely from research fellowships to industry R&D. 2026 levels, indicative.

8 The good parts · The challenges

The good parts

- Work on cutting-edge technology
- Open paths in research, teaching and industry
- Opportunities in global laboratories

The challenges

- Long study path (MSc/PhD often needed)
- Early fellowship stipends are modest
- Stiff competition for research posts

9 Real-life journeys

Venkataraman Radhakrishnan

Internationally renowned astrophysicist; former director, Raman Research Institute

With only a BSc from Mysore University, Radhakrishnan worked in the Caltech team that first calculated Jupiter's magnetic field and contributed richly to pulsar research. He led the Raman Research Institute for 22 years.

ThePrint · <https://theprint.in/theprint-profile/venkataraman-radhakrishnan-scientist-sailor-who-broke-through-the-shadow-of-nobel-kin/236538/>

Prof. Rohini Godbole

Particle physicist, Indian Institute of Science; Padma Shri

From a Pune college, Rohini Godbole went on to an MSc at IIT Bombay and a PhD in the US. She wrote over 280 papers linked to CERN experiments and championed girls taking up science in India.

YourStory (HerStory) · <https://yourstory.com/herstory/2021/01/particle-physicist-rohini-godbole-wins-french-award-ordre>

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.

- Mechanical Engineer
- Civil Engineer
- Electrical and Electronics Engineer

11 Sources & further reading

1. Rajasthan Career Guidance: Engineering Physicist — <https://cg.rajasthan.gov.in/careerguidance/hi/career/%e0%a4%87%e0%a4%82%e0%a4%9c%e0%a5%80%e0%a4%a8%e0%a4%bf%e0%a4%af%e0%a4%b0%e0%a4%bf%e0%a4%82%e0%a4%97-%e0%a4%ad%e0%a5%8c%e0%a4%a4%e0%a4%bf%e0%a4%95-%e0%a4%b5%e0%a4%bf%e0%a4%9c%e0%a5%8d%e0%a4%9e%e0%a4%be/>
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.

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