

# GENETIC ENGINEER

Genetic Engineers make changes to the genes of a living thing. Genes are tiny units, which carry information about an organism. They make up the material called DNA, which is found in the cells of every living thing. This process of gene modification is called Genetic Engineering.

## PERSONAL COMPETENCIES

- You enjoy Science
- You like to analyze things (problems/ situations)
- You like to do experiments
- You pay attention to details

## SCHOLARSHIPS

- Merit-cum-Means based Scholarship - About 20,000 such engineering scholarships are awarded by the Ministry of Minority Affairs every year. The full course fees of awardees is directly paid to their institutions under this scheme. \*
  - Indian Oil Educational Scholarship- The IOC Ltd offers 300 scholarships every year to eligible students. Students need to be enrolled in an undergraduate course. The scholarship particularly focuses on students with physical disabilities, women and students from North East and J&K.\*
  - Visit [www.scholarships.gov.in](http://www.scholarships.gov.in) the National Scholarship Portal. Under this portal there are central government schemes offered by different departments, UGC/AICTE Schemes and State Schemes.\*
  - Visit [www.buddy4study.com](http://www.buddy4study.com) a gateway to scholarships starting from Class XI.\*
  - Scholarships are made available by institutes themselves based on merit.\*
- \*(Availability of these scholarships vary from time to time)

## LOANS

- VidyaLakshmi, [www.vidyalakshmi.co.in](http://www.vidyalakshmi.co.in), is a portal for students seeking education loan. This portal has been developed under the guidance of the Department of Financial Services, (Ministry of Finance), Department of Higher Education (Ministry of Human Resource Development) and Indian Banks Association (IBA). Students can view, apply and track the education loan applications on the website.
- Some states have student credit cards with low interest rates, for instance, West Bengal, Odisha, Bihar, etc.
- All banks give education loans.



The approx. course fee ranges between **INR 2,00,000 - 10,00,000.\***  
\*(The above mentioned figures are approximate numbers. This will vary from Institute to Institute)

## ENTRY PATHWAY

1. Complete 10+2 in the Science stream (Physics, Chemistry and Maths)
2. Complete a Bachelor's degree in Genetics/Life Science/Biotechnology/Biological Science/Genetic Engineering OR  
Complete a Bachelor's degree followed by a Master's degree in the same or related field OR  
Complete 10+2 in the Science stream, pursue MBBS and then do an MD in Medical Genetics, Clinical Genomics, Bio-Physics, etc

*Please check the duration of the course during enrolment*



## EXPECTED INCOME

The figures are indicative & subject to change

The approx. salary of a Genetic Engineer ranges between **INR 16,500 - 3,33,333\*** per month

Source: [payscale.com/research/IN/Job=Genetic\\_Engineer/Salary](https://payscale.com/research/IN/Job=Genetic_Engineer/Salary)

## WHERE WILL YOU WORK

**Places of Work:** Agricultural and Medical industry, Research and development departments in public, Semi-public, and Commercial sectors, Pharmaceutical and Biotechnology sectors and Animal care centres among others

**Work Environment:** You will spend most of your time in laboratories, designing and conducting research experiments and performing genetic engineering procedures. You may work the usual nine-to-five schedule, although you may be required to work late and on weekends in a bid to complete research projects or write reports

*Opportunities for differently abled exist in this field*

## WHERE WILL YOU STUDY?

**This course is offered by the Department of Engineering.**  
*This list of institutes is indicative only*

### GOVERNMENT INSTITUTES

1. Indian Institute of Science, Bangalore
2. Aryabhatta Knowledge University, Patna
3. Madurai Kamaraj University, Madurai
4. Indian Institute Technology, Kharagpur
5. Indian Institute of Technology, Madras
6. Indian Institute of Technology, Guwahati
7. AWH Special College, Calicut
8. Delhi University, Delhi

### PRIVATE INSTITUTES

(Please check if institute is affiliated and accredited with UGC and AICTE before applying)

1. SRM University
2. Bharath Institute of Higher Education and Research
3. Sharda University, Greater Noida
4. Lovely Professional University, Jalandhar
5. Shoolini University, Himachal Pradesh
6. Asian International University, Manipur
7. Merit International Institute of Technology, Tamil Nadu
8. International Institute of Management and Technical Studies, Bangalore

Information on the institute rankings can be found at - [www.nirfindia.org/2022/Ranking.html](http://www.nirfindia.org/2022/Ranking.html)

### ONLINE COURSES

- Coursera- [in.coursera.org/search?query=sound%20engineering&](https://www.coursera.org/search?query=sound%20engineering&)
- Udemy- [udemy.com/courses/search/?q=sound+engineering&src=|sac&kw=sound+engineering](https://www.udemy.com/courses/search/?q=sound+engineering&src=|sac&kw=sound+engineering)

## EXPECTED GROWTH PATH



Research Assistant → Senior Researcher  
→ Manager/Professor

**OR**

Associate Scientist Scientist → Junior  
Scientist → Senior Scientist → Principal  
Scientist



## EXAMPLE FROM THE FIELD

**Janaki Ammal** (1897–1984) is known for her scientific research in Plant Cytology, the study of genetic composition and patterns of gene expression in plants. After schooling in Tellichery, she moved to Madras where she obtained the Bachelor's degree from Queen Mary's College, and an honours degree in botany from Presidency College in 1921. She received the Padma Shri Award in 1977 and went on to occupy the post of the Director-General of the Botanical Survey of India.\*

Source:

<https://atomstalk.com/stories/janaki-ammal-indias-first-woman-phd-in-botany/>

*\*The above information is for training purposes only and will not be used for any commercial gains.*

Search keywords...



*genetic analyst, genetic scientist, genetic engineering*