

# Department Of Bio Technology & Food Technology Scope 2026



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# Why Do I Choose Biotechnology?

## 1. Interest & Carrer Opportunities:

If you have a passion for both biology and technology, biotechnology offers a unique blend of these fields. It allows you to apply advanced technology to solve biological problems, which can be intellectually stimulating and rewarding. Biotechnology is a rapidly evolving field with a wide range of career opportunities. Graduates can work in pharmaceuticals, healthcare, agriculture, environmental science, research, and more. This diversity provides flexibility in choosing a career path.

## 2. Skill Development:

During your B.Tech in Biotechnology, you'll gain a range of technical skills such as molecular biology techniques, genetic engineering, bioinformatics, and laboratory proficiency. These skills are highly transferable and can open doors to various career paths.

## 3. Research Opportunities:

Biotechnology is at the forefront of scientific innovation. Pursuing a B.Tech in this field can provide you with the skills and knowledge to engage in cutting-edge research and contribute to scientific discoveries. Biotechnology programs often emphasize research. If you enjoy exploring the unknown, conducting experiments, and contributing to scientific knowledge, this field can offer ample research opportunities.

## 4. Entrepreneurship:

Biotechnology has a history of fostering innovation and entrepreneurship. You might have the chance to start your biotech company or work in a startup environment where your ideas can lead to groundbreaking discoveries.

## 5. Global Health:

Biotechnology is crucial in addressing global health challenges, such as vaccine development and disease diagnostics. If you're interested in making a difference in public health, this field can be your avenue to impact.

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## 6. Biomedical Applications:-

Biotechnology has numerous applications in medicine and healthcare. If you're interested in contributing to the development of new drugs, therapies, and medical technologies, this field can provide you with the knowledge and tools to do so.

## 7. Agriculture and Food Science:-

Biotechnology plays a critical role in improving crop yields, developing genetically modified organisms (GMOs), and ensuring food safety. If you're passionate about addressing food security and sustainability, biotechnology can be a pathway to making a difference in agriculture and food science.

## 8. Ethical Considerations:-

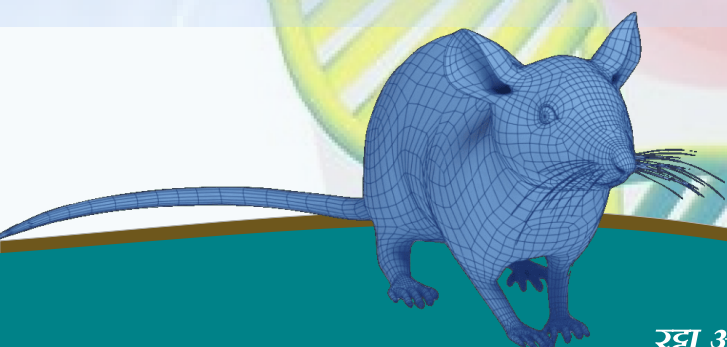
Biotechnology raises ethical questions and concerns, especially when it comes to genetic engineering and cloning. Studying biotechnology can equip you with the knowledge to engage in discussions about these ethical dilemmas and contribute to responsible decision-making in the field.

## 9. Career Growth:-

The biotechnology sector is known for offering competitive salaries and career advancement opportunities. As you gain experience and expertise, you can expect to see your career prospects grow.

## 10. Global Health:-

Biotechnology is crucial in addressing global health challenges, such as vaccine development and disease diagnostics. If you're interested in making a difference in public health, this field can be your avenue to impact.



# Why Do I Choose Food Technology?

## 1. Understanding Food Science:-

Food technology programs delve deep into the science behind food. You'll study topics like food chemistry, microbiology, food engineering, and food processing, which are essential for comprehending how food is produced, preserved, and transformed.

## 2. Nutrient knowledge and food safety:-

Food technology isn't just about processing food; it also involves understanding the nutritional aspects of different foods. You'll learn how to create food products that are not only safe and flavourful but also nutritionally balanced. Ensuring food safety is a top priority in the food industry. With a background in food technology, you'll be well-equipped to implement and monitor safety standards and practices to prevent foodborne illnesses.

## 3. Food Quality Assurance:-

The quality of food products is a key concern for consumers. Food technologists are responsible for maintaining and improving the quality of food items, which can lead to increased consumer satisfaction and trust in brands.

## 4. Research Opportunities:

Many food technology programs offer research opportunities, allowing you to contribute to the development of new technologies, identifying outbreaks by food and its products, processes, and products in the food industry.

## 5. Environmental Sustainability:-

Sustainable food production and processing are critical for reducing the environmental impact of the food industry. Food technologists can work on eco-friendly practices and technologies.

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## 6. Biotechnology Integration:-

Biotechnology plays a role in creating genetically modified organisms (GMOs) for better crop yields, improving food production processes, and enhancing food safety. You'll learn how biotechnology intersects with food technology.

## 7. Regulatory Compliance:-

Food technologists need to stay up-to date with food safety regulations and standards. You'll learn how to ensure that food products meet all legal requirements and quality standards.

## 8. Market Trends and Consumer Preferences:-

Food technology programs often cover consumer trends and preferences, which can help you create products that align with current market demands, such as organic, non-GMO, or plant-based foods.

## 9. Career Versatility:-

Food technology graduates can work in various sectors, including food manufacturing, quality control, research and development, product management, food safety inspection, and regulatory affairs.

## 10. Entrepreneurship:-

If you have an entrepreneurial spirit, a B.Tech in Food Technology can open doors to starting your food-related business, such as a specialty food brand, a catering service, or a food tech startup.

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# Why Biotechnology and Food Technology ?

Biotechnology and food technology are particularly important today due to several pressing global challenges and opportunities. Here's why these fields are crucial in the current context:

## 1. Pandemic Preparedness:-

In light of recent pandemic like COVID 19, biotechnology is essential for vaccine development and diagnostic tools. Food technology also plays a role in ensuring the safety of food supply chains during health crises.

## 2. Research and Development:-

Continuous research and development in biotechnology and food technology lead to breakthroughs that benefit society. This includes advancements in crop breeding, food processing, and food safety measures.

## 3. Innovation in Food Products:-

Consumer preferences are evolving, with demands for healthier, more convenient, and environmentally-friendly food products. These fields allow for the creation of novel food items and alternative protein sources (e.g., plant-based and cultured meat) to meet these changing consumer needs.

## 4. Food Security:-

The world's population is continuously growing, and ensuring an adequate and sustainable food supply is a top priority. Biotechnology and food technology play key roles in developing crop varieties with higher yields, improving food preservation techniques, and creating innovative food products to meet the increasing demand for food.

## 5. Health and Nutrition:-

There is a growing awareness of the link between diet and health. Biotechnology allows for the development of functional foods that provide health benefits beyond basic nutrition. Food technology ensures the safety and quality of these foods while also addressing issues like food allergies and dietary restrictions.

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## 6. Sustainability:-

With concerns about climate change and environmental sustainability, biotechnology and food technology can contribute to more sustainable agricultural practices, reduced food waste, and eco-friendly food production processes.

## 7. Food Safety:-

Foodborne illnesses are a global concern. Biotechnology can help in the development of pathogen-resistant crops, while food technology ensures that food products are produced and handled in a way that minimizes the risk of contamination.

## 8. Economic Growth:-

Both biotechnology and food technology are significant contributors to economic growth. They create jobs, drive innovation, and lead to the formation of new businesses, particularly in the agribusiness and food industries.

## 9. Ethical Considerations:-

Biotechnology and food technology raise important ethical questions, such as those related to genetic modification, cloning, and animal welfare. These fields necessitate ethical discussions and responsible decision-making.

## 10. Global Trade:-

Biotechnology can help in harmonizing regulations for genetically modified organisms (GMOs) and food labeling, facilitating international trade and food distribution.

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## Top 10 Biotech & Food Tech companies in India

- 1. Biocon Limited:** Biocon is one of India's largest Bio-pharmaceutical companies and a global leader in biotechnology. They are known for their work in biopharmaceuticals, research services, and healthcare.
- 2. Dr. Reddy's Laboratories:** While primarily a pharmaceutical company, Dr. Reddy's also has a significant presence in the biotechnology sector, particularly in biosimilars and research and development.
- 3. Serum Institute of India:** The Serum Institute is renowned for its production of vaccines, including the Oxford-AstraZeneca COVID 19 vaccine (Covishield). They are a key player in the vaccine industry.
- 4. Bharat Biotech:** Bharat Biotech is another prominent player in vaccine development and biotechnology research. They developed the Covaxin COVID-19 vaccine.
- 5. Mylan Laboratories:** Mylan, now part of Viatris, has a significant presence in the Indian pharmaceutical and biotechnology industry. They are involved in biosimilars and other pharmaceuticals.
- 6. Syngene International:** Syngene is a contract research organization (CRO) that offers integrated discovery and development services in areas like drug discovery, research, and development.
- 7. Glenmark Pharmaceuticals:** Glenmark is a pharmaceutical and biotechnology company known for its research in areas like oncology, respiratory, and dermatology.
- 8. Panacea Biotech:** Panacea Biotech is engaged in the research, development, and manufacturing of vaccines and biopharmaceuticals.
- 9. Intas Pharmaceuticals:** Intas Pharmaceuticals is primarily a pharmaceutical company but also has a presence in biotechnology and biosimilars.
- 10. Wockhardt:** Wockhardt is involved in pharmaceuticals and biotechnology and is known for its research and development efforts.
- 11. MTR Foods:** MTR Foods is a renowned Indian food processing company known for its wide range of packaged foods, including ready-to-eat meals, snacks, and spices.
- 12. iD Fresh Food:** iD Fresh Food is known for its fresh, preservative free, and ready-to-cook food products, including idli and dosa batter, parathas, and vada batter.
- 13. Epigamia:** Epigamia is a yogurt and dairy products brand that focuses on healthy and innovative dairy offerings, including Greek yogurt, smoothies, and artisanal curd.
- 14. Raw Pressery:** Raw Pressery specializes in cold-pressed juices and beverages made from fresh and natural ingredients, offering a range of healthy and nutritious options.
- 15. Slurrp Farm:** Slurrp Farm specializes in healthy and nutritious food products for children and families, including organic baby food, snacks, and millet-based products.



## Overall Developmental Activities

### Expert Talk

#### Innovation in Seaweed Farming: Towards Sustainable Approach

**Expert:** Prof. Dr. Vaibhav A. Mantri

Divisional Chair & Sr. Principal Scientist

Applied Phycology and Biotechnology Division

CSIR- Central Salt Marine Chemicals Research Institute, Bhavnagar.

#### Conducted by

Department of Biotechnology & Food Technology,  
GMIU, Bhavnagar.

on

03 February 2024

### Introduction:-

The Department of Biotechnology and Food Technology (DBT&FT) has organized an “Expert Talk on Innovation in Seaweed Farming: Towards Sustainable Tomorrow” by Dr. Vaibhav A. Mantri, Divisional Chair and Sr. Principal Scientist, Applied Phycology & Biotechnology Division, CSIR- Central Salt Marine Chemicals Research Institute, Bhavnagar, Gujarat under the Student Startup Innovation Policy (SSIP 2.0) of Government of Gujarat. DBT&FT hosted an expert talk event on 3rd February 2024 (Saturday). It was a day (3 hours) session conducted and delivered a talk on seaweed farming and various innovation practices.

Seaweed, often overlooked in comparison to its terrestrial counterparts, harbours immense potential for innovation and sustainability in various industries. As we stand at the cusp of environmental challenges and burgeoning global populations, the exploration of seaweed farming emerges as a beacon of hope, offering a promising avenue towards a sustainable tomorrow. In this comprehensive discourse, we delve into the burgeoning field of innovation in seaweed farming, exploring its multifaceted dimensions, ecological significance, economic viability, and the transformative impact it promises to deliver on a global scale.

Seaweed, a diverse group of marine macroalgae, holds a pivotal position in marine ecosystems, contributing significantly to biodiversity, carbon sequestration, and ecosystem resilience. Its ecological importance extends beyond its role as a primary producer; seaweed forests serve as crucial habitats and nurseries for a myriad of marine organisms, while also playing a vital role in nutrient cycling and shoreline stabilization. Moreover, seaweeds possess remarkable biochemical properties, offering a rich source of bioactive compounds with potential applications in pharmaceuticals, nutraceuticals, and cosmeceuticals. Thus, the cultivation and utilization of seaweed represent a holistic approach towards sustainable resource management and ecosystem stewardship.

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The traditional practice of seaweed farming, prevalent in many coastal communities worldwide, has laid the foundation for contemporary innovations in seaweed cultivation techniques. From rudimentary stake and line cultivation methods to sophisticated offshore cultivation systems, the evolution of seaweed farming reflects a convergence of traditional knowledge and modern technology. Innovations such as integrated multi trophic aquaculture (IMTA), which combines seaweed cultivation with fish or shellfish farming, exemplify the synergistic potential of harnessing diverse marine resources to enhance productivity and sustainability. Furthermore, advancements in biotechnology and genetic engineering have unlocked new frontiers in seaweed breeding and Bioprospecting, facilitating the development of high-yield, disease-resistant cultivars with desirable traits. Genetic manipulation holds immense promise for enhancing seaweed biomass productivity, improving nutritional profiles, and tailoring biochemical composition for specific industrial applications. However, ethical considerations and environmental implications must be carefully evaluated to ensure responsible innovation and mitigate potential risks associated with genetic modification. In tandem with technological innovations, the emergence of seaweed biorefineries represents a paradigm shift towards a circular bioeconomy, wherein seaweed biomass is valorised and utilized in a cascading manner to extract a diverse array of value-added products. Seaweed biomass, rich in polysaccharides, proteins, lipids, and bioactive compounds, serves as a versatile feedstock for the production of biofuels, biochemicals, functional ingredients, and biodegradable materials. Moreover, seaweed-based biorefineries offer a sustainable solution for waste valorisation and carbon sequestration, mitigating greenhouse gas emissions and contributing to climate change mitigation efforts. In conclusion, innovation in seaweed farming embodies the essence of sustainable development, offering a holistic solution to pressing environmental, socio-economic, and public health challenges. By harnessing the ecological, economic, and technological potential of seaweed cultivation, we can pave the way towards a sustainable tomorrow, characterized by resilience, prosperity, and harmony with nature. Through interdisciplinary collaboration, research, and policy support, we can unleash the transformative power of seaweed innovation, ushering in a new era of sustainability and abundance for generations to come. Total 64 student have attended the 3 hour session along with 20 faculty from both side.



### **Vote of Thanks To**

**Dr. Vaibhav A. Mantri**

**CSIR- Central Salt Marine Chemicals Research Institute, Bhavnagar**

**For his Expert Session at**

**Department of Biotechnology & Food Technology,**

**Gyanmanjari Innovative University, Bhavnagar.**

We at the Department of Biotechnology & Food Technology, Gyanmanjari Innovative University (GMIU), Sidasar Road, Bhavnagar are very much thankful to Dr. H. M. Nimbark (Provost, GMIU, Bhavnagar), Prof. Anish Vora, (Director, Training and Placement) Prof. Vedant Gaud (Head, DBT&FT, GMIU) for their continues guidance and organizing the expert session GMIU, Bhavnagar on 3rd February 2024 for engineering, Pharmacy and Sciences students. We are also thankful to GMIU, and Bhavnagar management for providing a platform, resources, and various technical facilities including refreshments for students as well as all faculty mentors during this event.

## Expert Talk

**Expert: Dr. Arvind kumar**  
**Chief Scientist**  
at  
**Central Salt & Marine Chemicals Research Institute**  
**Council of Scientific & Industrial Research**  
**G.B. Marg, Bhavnagar 364002, Gujarat, India**

## Information about Expert Talk

An informative and thoughts provoking lecture as Guest Speaker on “**Introduction of Salt and Marine Chemicals** ” held at Gyanmanjari Science College, Bhavnagar. It was really a splendid presentation which exposed students to the field practices. All the students appreciated and got benefited from your views on the subjects. Scope of jobs or further study after B.Sc and M.Sc.

Expert talk was delivered by Dr. Arvind Kumar, Chief scientist at Central Salt & Marine Chemicals Research Institute (Council of Scientific & Industrial Research), G. B. Marg Bhavnagar 364002, Gujarat, India. 80 students attended the expert talk.



# Techmanjari-2026



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## Industry Visit

# Industrial Visit @Vibrant Gujarat, Gandhinagar on 12/Jan/2024

Vibrant Gujarat, also referred to as Vibrant Gujarat Global Summit, is a biennial investors' global business event that is held in the state of Gujarat, India. The event is aimed at bringing together business leaders, investors, corporations, thought leaders, policy and opinion makers; the summit is advertised as a platform to understand and explore business opportunities in Gujarat. The summit's primary objective is to promote Gujarat as an attractive investment destination and to facilitate partnerships and collaborations across different sectors. Summit began in 2003 and is now held every two years.



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## Dedicated Faculties in The Department



**Dr. Krishnaraj S**  
**Head of the Department**  
**( Bio-technology & Food technology)**  
GMIU



**Dr. Anand Salvi**  
**Assistant Professor**  
**( Bio-technology & Food technology)**  
GMIU



**Prof. Ami Thakkar**  
**Teaching Assistant**  
**( Bio-technology & Food technology)**  
GMIU



**Prof. Raval Niyati**  
**Assistant Professor**  
**( Bio-technology & Food Technology)**  
GMIU



**Prof. Dhamecha Kashyap**  
**Assistant Professor**  
**( Bio-technology & Food technology)**  
GMIU

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## Opportunities Available in Bhavnagar Vicinity for Biotechnology & Food Technology

### 1. CSIR- Central Salt Marine Chemical Research Institute, Bhavnagar



### 2. Mahuva Dehydration Pvt. Ltd (Plants), Mahuva, Bhavnagar



### 3. Herald Biotech Pvt Ltd., Bhavnagar.

### 4. Biostadt India Pvt Ltd., Bhavnagar

### 5. Shree Hans Food Processing, Bhavnagar

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