

The Charutar Vidya Mandal (CVM) University



Top Ranked College listed between 101-150 (2022), 151-200 (2021, 2023) and 201-250 (2024) in NIRF (National Institutional Ranking Framework) by MHRD (Ministry of Human Resource Development), Government of India, New Delhi 1st Rank (2020, 2021, 2022) & 3st Rank (2019, 2023) College among all Colleges of Gujarat in GSIRF (Gujarat Institutional Rating Framework) by KCG (Knowledge Consortium of Gujarat), Department of Education, Government of Gujarat

# M.Sc. BIOTECHNOLOGY (BT)

#### **About M.Sc. Biotechnology Course:**

The M.Sc. in Biotechnology is an innovative and interdisciplinary postgraduate program aimed at providing students with both the theoretical knowledge and practical skills required to thrive in the fast-paced field of biotechnology. This course thoroughly explores topics such as molecular biology, genetic engineering, bioprocessing, bioinformatics, and more, with a strong focus on research and innovation.











#### Areas of research offered

Microbial Biotechnology, Food Microbiology, Enzyme Technology, Bioprocess Technology, Microbial Physiology, Molecular Biology, Immunology, Biochemistry, Nanobiotechnology.

#### **Key Features of the Program:**

- Duration: 2 Years (Full-time)
- Mode of Study: On-campus (Lectures, Practical Training, Research Projects)
- Eligibility: Candidates who have passed B.Sc. in, Biotechnology, Microbiology, Genetics, Biochemistry, Botany, Zoology, Paramedical sciences or any branch of life sciences from recognized university are eligible to apply.

#### Salient features :-

- Well-equipped laboratories with sophisticated instruments
- Highly qualified faculties
- Provide a platform to develop research aptitude.
- Career and Personality development classes
- Teaching plans, Practical protocols, Dissertation thesis available online, rich digital library.
- · Extracurricular activities through student-run clubs
- In-house dissertation
- Arrangement of lectures of the senior researchers or professionals
- Organize Industrial visits and encourage the students for internship programs.

Course content of M. Sc. Biotechnology			
Sem 1	Sem 2	Sem 3	Sem 4
Cell Communication & Cell Signaling	Industrial waste management	Drug Design and Development	Biosafety, Bioethics & IPR
Biodegradation & bioremediation	Bioprocess engineering & technology	Material balance, mass transfer and transport process	Bioinformatics
Food biotechnology	O'-mics	Metabolic engineering	Dissertation
Microbial Technology	Bioseparation technology	Nanobiotechnology & Applications	

#### Career Opportunities:

- Biotech Companies: Work as a Research Scientist, Bioprocess Engineer, or Quality Control Analyst.
- · Pharmaceutical Industry: Contribute to the development of new drugs, vaccines, and therapies.
- Academic Research: Pursue doctoral studies or academic careers in biotechnology or related fields.
- Environmental Sector: Work as an Environmental consultant or biotechnologist specializing in waste management and bioremediation.
- Agricultural Biotechnology: Work on genetic modification, crop improvement, and sustainable agricultural practices.

Institute of Science & Technology for Advanced Studies and Research (ISTAR)





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# M.Sc. Cyber Security

#### About M.Sc. Cyber Security:

Protecting the Digital Future: Secure Your Career in Cybersecurity

As we become more connected to the digital world, the need for skilled professionals to protect data, networks, and systems is ever demanding. The Charutar Vidya Mandal (CVM) University is proud to offer a comprehensive, cutting-edge Postgraduate Cybersecurity Programme designed to equip you with the skills and knowledge necessary to defend against the growing threats in the cyber world.

Course Duration: 2 Years

Eligibility: As per UGC/CVMU Norms

Who passed, BCA | BBA (ITM / ISM) | B.Sc. (IT) | B.Sc. (CA & IT) /any Science Graduate/any engineering Graduate who studied one theory course in Computer Science/Information Science from any recognized University.

#### Course Structure for M.Sc. Cyber Security

#### Semester - I

- Fundamentals of Computer Technology
- **Fundamentals of Operating Systems**
- **Data Communication & Computer Networks**
- **Ethical Hacking Essentials**
- Introduction to RDBMS
- Web Programming I

- Semester III 

  Data Security
  - Fundamentals of Cyber Law (ITAA 2008)
  - End-Point Security: Windows Systems
  - End-Point Security: Linux Systems
  - End-Point Security: IoT and Mobile Devices
  - Python Programming I

#### Semester - II

- **Network Defense Essentials**
- **Digital Forensics Essentials**
- Web Server Management
- Advanced Ethical Hacking
- Hacking Web Servers and Web Applications
- Web Programming II

#### Semester - IV

- Enterprise Network Security
- Fundamentals of Digital Personal Data Protection Act 2023
- Incident Response and Forensic Investigation
- Business Continuity and Risk Management
- Cyber Threat Intelligence
- Python Programming II

### -: Unique Features :-

- Programme is designed as per the current Industry requirements.
- Two-year Postgraduate Programme offered at The Charutar Vidya Mandal (CVM) University.
- This Programme provides the knowledge, technical skills and solid background in the field of Cyber Security.
- Highly skilled and qualified pool of Faculty Members.
- Seminars, Industrial Visits, Study Tips, Expert Talks, Webinars, Summer Trainings, Bridge Courses, and Hands-on-Workshops and Sports week for the overall Student development. Enriched library facility with latest edition books and periodical journals.
- Strong industry linkages for better placements.
- Consultancies and research organizations in several parts of our country and abroad also.
- Well Equipped Laboratory & Smart Classrooms.

#### -: Program Outcomes :-

- Understand the Fundamental and Advanced concepts of Cyber Security.
- Be proficient in Ethical Hacking, Penetration Testing, and Secure Coding practices.
- Be capable of implementing Network Security and Security measures for various systems.
- Be trained in Incident response and Digital Forensics for effective Threat detection and mitigation.
- Be equipped with hands-on experience using industry-standard cybersecurity tools.
- Be well-prepared to address real-world security challenges in diverse environments, such as cloud, IoT, and enterprise networks.
- Have the skills needed to pursue successful career as a Cyber Security Professional.

ADMISSION

FOR NEXT ACADEMIC YEAR WILL START

FROM MAY

ISTAR

Institute of Science & Technology for Advanced Studies and Research (ISTAR)

P.O. Box # 13, Near Post Office, Mota Bazar, Vallabh Vidyanagar- 388120. Dist. Anand, Gujarat, India Phone: 02692 - 234955 (O) 7802037434 (Mr Parth Parikh)





Charutar Vidyamandal's

# INSTITUTE OF SCIENCE & TECHNOLOGY FOR ADVANCED STUDIES & RESEARCH

Top 3<sup>rd</sup> Rank Among All Colleges of Gujarat by KCG (GSIRF)

(Recognized by Section 2(f) & 12(B) of UGC Act by University Grant Commission, New Delhi)
(Accredited "A" Grade by NAAC & KCG)

# M.SC. ENVIRONMENTAL SCIENCE & TECHNOLOGY (EST)

Affiliated to CVM University, Vallabh Vidyanagar, Anand, Gujarat





#### **FASCINATING FEATURES**

- The course provides knowledge, technical skills and competitive background not only in Ecological, and Environmental Science & Technology (EST), but also in Industrial Hygiene & Safety (IHS).
- Four semesters & Two Years Master Degree Program is offered.
- The program is flexible enough to fit in the interests and need of wide spectra of Industries, Consultancy, Academics, Research Institutes & various Organizations of Gujarat State as well as India in the field of Environmental Science, Pollution & Management, Hygiene & Safety.
- 10-12 weeks of Project / Dissertation work in frontiers of Environmental Science and Technology and Industrial Hygiene & Safety during 4th Semester.

- Certificate Course for 3-days on On-hand Instrumentation
   Training at Sophisticated Instrumentation Center for
   Applied Research & Testing (SICART) on GC-MS, ICPA,
   FT-IR, Environmental Testing Mobile Van during 4th
   Semester.
- 100% University Results with maximum number of First Class and Distinctions since inception of the course.
- Cutting-edge of research in frontiers of EST: Received funds for Major Research Projects from reputed National Funding Agencies such as MoEF, MoES, DST, UGC, FES, CCD, etc.
- Taught by highly skilled, well-experienced, well-qualified, and competent Faculties from Physical, Chemical, Biological & Natural Science aspects.
- · Intake: 70 Seats

# **COURSE CONTENT**

#### Semester 1

- Environmental Biology & Restoration Ecology
- Air Pollution & Climate Change
- Water Pollution & Control Technology
- Environmental Chemistry & Geology
- Practical Two Papers

#### Semester 2

- Remote Sensing & Geographic Information System
- Meteorological & Environnemental Instruments
- Occupational & Environmental Toxicology\*
- Industrial Hygiene & Occupational Health\*
- Practical Two Papers

#### Semester 3

- Environmental Biotechnology
- Environmental Impact Assessment & Legislation
- Industrial Safety & Control Technology\*
- Industrial Pollution & Control Technology\*
- Practical Two Papers

#### Semester 4

- Waste Management & Control Technology
- Environmental Resources & Biodiversity Conservation
- Practical One Paper
- Project Work / Dissertation

\* Indicates Courses related to Industrial Hygiene and Safety





#### **Eligibility for Admission**

Bachelor of Science: Environmental Science, Botany, Zoology, Fire & Safety, Chemistry & Allied Sciences, Biochemistry, Biotechnology, Microbiology, Genetics, Bioinformatics, Geography, Geology, Physics, Biomedical – Lab Technician, B.Sc. Agriculture, B.Sc. Forestry, B.Sc. Home Science, Bachelor of Engineering, B. Pharm.

# **Admissions From May**

### Absolute assistance in Campus Interview & Placements:

Majority of our students are employed in Industries, Consultancies, and Research Organizations in several parts of our country and abroad.

#### **Employment Opportunities (Absolute Placement):**

**In Industry:** As Environmental Auditors, Environmental Officers, ETP Supervisors, Consultants, Safety Officers, Hygienists, Scientist, Lab Supervisors, Scientific Officers, Lab Chemists, Field Supervisors, Plant Supervisor

In Academics: As Assistant Professors, Lecturers, Teachers 992591097





#### Memorandum of Understanding (MoU)

 National Institute of Advanced Industrial Science & Technology (AIST), Tsukuba, Japan • Missouri University of Science & Technology (MST), Rolla, Missouri, USA • Nandesari Industrial Association (NIA), Green Circle, Inc., Baroda • Gujarat Institute of Desert Ecology (GUIDE), Bhuj (Kachchh) • Vidyanagar Nature Conservancy (VNC), GCPC, Gandhinagar, Govt. of Gujarat.

#### **Unique Features**

Excellent Laboratory Facilities • Seminars, Workshops, Industrial Visits, Study Trips, Summer Training • Weekly Practice Test, Bridge Course, Competitive Exams • Preparation for NET & SLET • Field Sampling Techniques, Laboratory Analytical Methods • Expert Talks, Guest Lectures, Ph.D. Program in Environmental Science & Biotechnology

# Admission Inquiry:

Dr. Dhruti S. Patel (9925910970), Dr. Hiren B. Soni (9426023901)







# ISTAR I तेजस्विनावधीतमस्तु ॥

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# M. Sc. Geoinformatics

Duration: 2 Years (4 – Semesters)
Affiliated to CVM University, Vallabh Vidyanagar, Anand, Gujarat.

#### GOAL :

The goal of this M. Sc. Degree Pragramme is to produce highly qualified and motivated post graduates who have been trained in GIS, RS, GPS, DBMS and related IT fields.

#### SALIENT FEATURES.....

- Upcoming Opportunities Under Digital India, Smart Cities, AMRUT, Skill India, Land Record & Power Sector Modernization, Municipality Utilities Services, E-governance, E-Kranti, Rail-Adhar for Project Management & Implementation
- Linkages with ISRO-IIRS, C-DAC, MPCOST, Compusense Automation, Scanpoint Geomatics & Reputed Recruiting Agencies
- Technical support from Indian Society of Geomatics, Ahmedabad

 Blend of Multidisciplinary Aspects of Remote Sensing, Image Processing, GPS, Android, Geoinformatics, Geo Web Servers, Live Field Project Work etc.

**Application Areas**: E- Governance, Environment & Climate change, Urban Infrastructure Development & Planning, Tourism, Irrigation, Forestry, Agriculture, Water Resource, Rural Development, Mineral Prospecting, Geosciences, Disaster Management, Crowd Sourcing, Database Management, Ocean Resource, WebGIS etc.



Students Participation @ ISRO



Expert Lecture by ISRO Scientist

# Job Scope

\* ISRO - IIRS

\* R & D Organizations

Municipalities

\* NRSC

Govt. Ministries

Survey of India

❖ NGOs

Agriculture

❖ Geospatial Companies

❖ Smart City

Surveyor

❖ Disaster Management Organization...

GOVERNMENT

SCHOLARSHIP FOR

STUDENTS Freeship Card

# Why @ ISTAR?

- 1. Well Trained Faculties & Lab Equipped with RS,GIS, GPS & Image Processing Software & Hardware
- 2. Focus is given on conveying new approaches to data processing, analysis and interpretation as well as the use of innovative technologies.
- 3. Institute is conducting PG Diploma Course since 2014 -15.

All students of previous batches are well placed.

4. Provide online certificate courses organized by IIRS-ISRO, Dehradun.

**Eligibility** 

B. Sc., BCA, B.E., B. VoC (SD), BBA (ITM/ ISM), PGDCA, PGDCAA, MCA, M.Sc.

Fees

Rs. 35000/- per semester



**IIRS-ISRO Online Exam** 



Industrial Visit



**GPS & Total Station Training** 



Python Workshop





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# M.Sc. INDUSTRIAL CHEMISTRY

#### SALIENT FEATURES.....

- Four semester masters degree programme started in 1990.
- Fine blend of Chemical Engineering and Chemistry.
   Curriculum comprises of the core aspects of chemical engineering, organic chemistry, polymer chemistry, Industrial Management & Safety.
- Well equipped laboratories with facilities for Chemical Engineering practicals, Industrial Analysis & Organic Synthesis.
- Compulsory in-plant training of six weeks after completion of second semester.
- Regular expert lectures from eminent people from industry & academics
- Industrial visits to make the students updated with the latest trends followed in industries.
- Students counseling & Personality Development Programmes for students

- · Strong Academic-Industrial Interaction
- On hand Instrumentation training in Sophisticated Instrumentation Centre for Applied Research & Testing (SICART) on GC,FTIR and HPLC.
- Library enriched with latest edition of books and periodicals based on Chemical Engineering and Chemistry
- Suitability of students to get placed in all type of chemical industry in production,QC,QA,R&D and process development divisions.
- · Facility for Ph.D in the department
- Campus Placement by esteemed organizations in and outside Gujarat well before the commencement of university examinations.
- Scholarships awarded by Lupin Ltd. and MISA

# Course Content: M.Sc. INDUSTRIAL CHEMISTRY

- Industrial Management & Psychology
- Mass Transfer Operation
- Industrial Organic Chemistry
- Technology of Oleo chemicals & Surfactants
- Water Pollution Control Technology
- Spectroscopy & Instrumental Techniques
- Process Safety Management & Transportation of Fluids
- Pharmaceutical Technology
- Processing of Oils & Fats To Utility Products
- Industrial Polymers
- Unit Processes

- Heat Transfer Operation & Stoichiometry
- Petrochemical Technology
- Technology of Paint Manufacturing, Printing Inks & Heavy Duty Protective Coatings
- Air Pollution Control Technology
- Introduction to Reaction Engineering & Steam Generation
- Process Development in Chemical Industries
- Technology of Chemical Process Industries
- Advanced Analytical Chemistry
- Natural Products





# Eligibility for Admission

A candidate who has passed Bachelors degree examination in B.Sc. Industrial Chemistry / B.Sc. Industrial Chemistry (Vocational) / B.Sc. Applied Chemistry / B.Sc. Industrial Polymer Chemistry / B.Sc. Chemistry / B.Pharm/Bio Chemistry and other candidates who have studied at least two papers of Chemistry at Second Year or third year of B.Sc as core or elective subjects.



**Laboratory Facilities:** Laboratories are equipped with modern equipment used for analytical, Synthesis and Chemical engineering practicals to cater the need of practical education.

Placement Details: Lupin Itd.(Ankleshwar, Dabhasa, & Mandideep Units), Reliance Industries Ltd. Jamnagar, Zydus lifescience Ltd., Kansai Narolac, Royal Castor Pvt.Ltd. (RCPL), Philips Carbon Black Ltd. (PCBL), Asian Paints Ltd., Atul Ltd., Torrent Pharmacueticals Ltd.

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# M.Sc. INDUSTRIAL HYGIENE AND SAFETY

Affiliated to CVM University, Vallabh Vidyanagar, Anand, Gujarat.





- The IHS programme is offered in collaboration with faculties from the Engineering, Medicine & Science Fields.
- Govt. of Gujarat has notified that the students who possess "Master Degree in Industrial Hygiene and Safety" could be employed as Safety Officers.
- · Many IHS degree holder of this programme are confirmed with international certification of Certified Industrial Hygienist and Certified Safety Professional.
- 100% University Results with first class and distinction
- Taught by highly skilled, well-experienced, well-qualified and competent Faculties from Academic & Industrial fields.

### Course Contents: M. Sc. INDUSTRIAL HYGIENE AND SAFETY

Semester I

**Core Papers** 

- Introduction to Industrial Hygiene, Occupational Health & **Environmental Toxicology**
- Safety Management
- Air Sampling Analysis
- Safety Engineering-I
- Practical, Seminar, viva Based on PS01CIHS21 and PS01CIHS23
- Introduction to Human Physiology, Biostatistics and Epidemiology

Semester II

**Core Papers** 

Industrial Ventilation

- Hazard Identification, Assessment and Control Techniques
- Physical Aspects of the Environment
- Safety in Chemical Industry
  Practical, Seminar and VIVA Based on PS02CIHS21 and PS02CIHS23 Elective (Any One)
- Industrial Visits and Seminars
- **Accident Case Studies**

Semester III **Core Papers** 

- Medical Surveillance and Biological Monitoring
- Hazardous Waste Management
- Principles of Ergonomics
- Safety Engineering- II
- Legislation on Safety & Health Elective (Any One)
- Advanced Safety Management and Engineering Techniques
- Safety in Construction Industry

Semester IV

**Core Papers** 

- : Standards on Safety & Health
- · Project Work / Dissertation

**Eligibility for Admission** 





A candidate who has passed a B. Sc. OR B.E. from a recognized university

will be eligible for admission.





Campus Interview and placement: Almost all students are employed during the 4th Semester of their practical training and dissertation work at the different industries . Previous Years: Reliance Ltd., 3M, L&T, ESSAR Steel Ltd. Surat , ESSAR Power, International Safety System, Industrial Hygiene Services, Jaypee Group, Jubliant Infrastructure Ltd, John Energy, Sustainable EHS, Mylan Pharma, TATA Steel, Linde Engineering, DRL, Dishman Pharma, United Phosphorous Ltd , Genpact Jaipur, Vapi Environtech Ltd.

Employment Opportunities: IHS Students are placed in various industries as a Safety Officer, Industrial Hygienist and Environment Health and Safety Officer. Normally post offered is of Assistant Managers and Safety executive with handsome remuneration.

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# **COMPUTER SCIENCE (MCA / M.Sc. IT Programme)** Constituent College of The CVM University

About Master of Computer Application (MCA): Course Designed based on Full Stack Development Theme

MCA programme of The CVM University is theme based programme that meets the IT industries demand and prepare qualified professionals. MCA Programme always emphasis concept oriented and practical based pedagogies approach for their learners.

Course Duration: 2 Years

Eligibility: As per AICTE/ACPC/CVMU Norms

A candidate shall have passed the qualifying examination of B.C.A. / B.Sc. (Computer Science) / B.Sc. (IT) / B.E. (CSE) / B.Tech. (CSE) / B.E. (IT) / B.Tech. (IT) or equivalent Degree or passed any graduation degree (e.g.: B.E. / B.Tech. / B.Sc. / B.Com. / B.A. / B.Voc. / etc.) preferabley with Mathematics, Business Mathematics or Statistics at 10+2 level or Graduate level. Passing Criteria: Minimum 50% (45% for SC / ST / SEBC/EWS)

#### **Course Contents: MCA**

#### Sem-1

- Java Beginner to Professional
- Python Beginner to Professional
- Operating system
- Web Programming Concepts Beginner CSS Responsive framework to Professional
- Data Structure

#### Sem-2

- Databases Beginner to Professional
- Full Stack Web Development
- Software Testing and Quality Assurance
- **PHP Framework**
- Linux Programming and Shell Scripting

### Sem-3

- Mobile Application Development
- Project Management
- Project on full stack development
- Cloud Computing
- Content Management System

#### Sem-4

Internship(Project Work)

#### About M.Sc. (Information Technology): Course Designed based on Data Science Theme

Information Technology is the most captivating sector of the modern world. Every people and each of the organization are been fascinated by the technique of it. The objective of this course is to "Produce Master of Science (IT) students with technological and skilled abilities to work on real challenges of the industries and societal needs."

Course Duration: 2 Years

Eligibility: As per UGC/CVMU Norms

Who passed, B.Sc. (IT) | BCA | BBA(ISM / ITM) | BE (IT, EC, CE) | any Science Graduate who studied one theory course in Computer Science / Information Science from recognized University.

#### Course Contents: M. Sc. (IT)

#### Sem-1

- Java Beginner to Professional
- Python Beginner to Professional
- Computer Network
- Web Programming Concepts Beginner to Professional
- R Programming

#### Sem-2

- Databases Beginner to Professional
- .NET Core Framework
- Data Mining Techniques & Artificial intelligence
- Python Framework
- Internet of Things (IoT)

#### Sem-3

- Mobile Application Development
- Project Management
- Project on Data Science
- Machine Learning
- Natural Language Processing
- Digital Image Processing Sem-4
- Internship (Project Work)

#### **Unique Features:**

 Both courses are designed as per the current industry requirements. • Two year postgraduate programme affiliated to The CVM University. • The course provides the knowledge, technical skill and solid background not only in the field of computer science but also would make them compatible with industrial standards. • Highly skilled and qualified pool of faculty members. • Seminars, Industrial visit, Study Tips, Expert Talks, Webinar, Summer Training, Bridge Course, hands on workshop and sport week for the overall student development. • Enriched library facility with latest edition books and periodical journals. • Majority of our students are employed in industries, consultancies and research organizations in several parts of our country and abroad also. • Well Equipped Laboratory & smart Classrooms.

Program Outcomes: Provide a platform to the students to interact with leading teachers, scientist, and industry practitioners.

- Technical Proficiency: Post Graduates in computer science should possess a strong understanding of various programming languages, databases, software engineering principles, algorithms, data structures, and other technical aspects relevant to computer applications.
- Advanced Technology: Students get the knowledge of latest technology which is currently required in industries.
- Problem-Solving Skills: Post graduates in computer science should be adept at analyzing complex problems and devising efficient solutions using computational techniques and software development methodologies.
- Project Management: Post programs often emphasize project management skills, including planning, scheduling, budgeting, resource allocation, risk management, and coordination, to ensure successful completion of software projects.
- Continuous Learning: Given the rapidly evolving nature of technology, Post graduates should demonstrate a commitment to lifelong learning and professional development, staying updated with the latest trends, tools, and techniques in the field of computer applications.
- Career Readiness: Ultimately, the goal of an MCA program is to prepare graduates for successful careers in various sectors such as software development, IT consulting, system analysis, database administration, project management, research, and academia. Graduates should possess the skills, knowledge, and mindset required to excel in their chosen career paths and make meaningful contributions to the field of computer applications.

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Institute of Science & Technology for Advanced Studies & Research (ISTAR), Mota Bazar, Vallabh Vidyanagar - 388120, Dist. Anand, Phone: +91 02692-234955 Email: office.istar@cvmu.edu.in Website: www.istar.edu.in Please Call for Further Details: Dr. Ashish Joshi (9510586855), Dr. Niky Jain (9033367762), Dr. Suchita Patel (957434914)





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# M.Sc. MICROBIOLOGY FASCINATING FEATURES

- State-of-the-Art Laboratories: Equipped with advanced tools for Microbiology, molecular biology, genomics, and proteomics, fostering hands-on learning.
- Research-Driven Curriculum: Focused on cuttingedge topics like microbial genomics, bioremediation, medical microbiology, environmental microbiology, and industrial biotechnology.
- Interdisciplinary Learning: Collaboration with other disciplines like Biotechnology, biochemistry, bioinformatics etc for holistic understanding.
- Industry and Academia Integration: Regular guest lectures, workshops, and seminars by leading scientists and industry professionals.
- Innovative Teaching Methods: Use classrooms and problem-based learning approaches to enhance

- comprehension.
- Internships and Industrial Exposure: Partnerships with pharmaceutical companies, biotech firms, and research institutions for hands-on experience.
- Publication Opportunities: Encouragement to publish research findings in reputed journals, contributing to the academic community.
- Academic Competitions: Hosting and participating in national and international conferences, quizzes, and hackathons related to microbiology.
- Career Guidance: Strong placement support & career counseling for roles in academia, industry, and research.
- Sustainability Focus: Courses and projects based on microbial applications for sustainable development and environmental conservation.

### **COURSE CONTENT**

### **SEMESTER 1**

- Molecular Biology
- Bioanalytical Techniques & Instrumentation
- Cell Biology
- Fundamentals of Biochemistry & Bioenergetics

#### **SEMESTER 2**

- Fermentation Technology
- Basics of Microbial Genetics
- Immunology
- Biostatistics

### **SEMESTER 3**

- Microbial Biotechnology
- Environmental & Agricultural Microbiology
- Enzyme Kinetics & Mechanisms
- Bioinformatics

### **SEMESTER 4**

- Gene regulation & recombinant DNA Technology
- Environmental Biotechnology
- Dissertation



# **Eligibility for admission**

CANDIDATES WHO HAVE PASSED B.Sc. IN MICROBIOLOGY, BIOTECHNOLOGY, GENETICS, BIOCHEMISTRY, BOTANY, ZOOLOGY, PARAMEDICAL SCIENCES FROM ANY RECOGNIZED UNIVERSITY ARE ELIGIBLE TO APPLY.



#### Absolute assistance in Campus Interview & Placements:

Majority of our students are employed in Industries, Research Organizations, Academics and Consultancies and in Several parts of country and abroad.

#### **Employment Opportunities:**

In Industry: As Scientific Officers, Lab. Technicians in different Pharmaceuticals, Healthcare, Fermentation industry, Biotechnology industry, Agriculture industry, Lab Diagnostics

In Academics: As Assistant Professors

In Research: Research Scholars (JRF & SRF)

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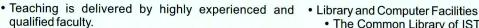


#### M.Sc. ORGANIC CHEMISTRY

**Constituent College of CVM University** 

Eligibility for Admission B.Sc. Degree in Chemistry / Industrial Chemistry (Vocational)

# Salient Features



- Laboratories, class rooms and seminar hall
  - State-of-art well-equipped spacious laboratories for Organic, Inorganic and Physical Chemistry
  - Class rooms are well-ventilated and equipped with advanced multimedia facility.
  - A seminar hall with modern multimedia technology and a capacity of around 100 is also furnished.
- Career Services
  - Career counseling, mock interviews, resume writing seminars and personality development programme conducted during the academic year by experts.
  - Placement by campus interviews.
  - Industrial visit during academic year.

- - · The Common Library of ISTAR, plays a vital role in achievement, organization and spreading of
  - · It has an excellent collection of books, journals, technical reports and other reading material.
  - The students have access to internet in the library via broad-band and in the campus premises via Wi-Fi connectivity.
- · The students are given free training on various sophisticated analytical instruments (FTIR, NMR, GCMS, HPLC, SEM, TEM, TGA, DSC etc.) at SICART
- Invited expert lectures are conducted regularly.
- Students can pursue Ph.D. programme after M.Sc. degree.
- Job opportunity in R & D, QC, QA, ADL and Production departments in pharmaceuticals, agrochemicals, paint, polymer and petrochemicals industries.

# Syllabus (CBCS)

Semester I

1) Electron Spectroscopy and Magneto chemistry **Core Papers** 

2) Organic Chemistry-I

3) Physical Chemistry-I Elective

COURSE 1) Polymer Chemistry

2) Biophysical Chemistry

Semester III

**Core Papers** 1) Organic Spectroscopy 2) Disconnection Approach

3) Heterocyclic Chemistry

**Elective** 

COURSE 1) Selected Topics in Organic Chemistry

2) Occupational Practices

Semester II

**Core Papers** 

1) Quantum Chemistry & Organometallic Chemistry

2) Organic Chemistry-II

3) Topics in Physical Chemistry-II

**Elective** COURSE

: 1) Analytical Chemistry

2) Introduction to Biochemistry

Semester IV

**Core Papers** 

: 1) Natural Products

2) Medicinal Chemistry

Elective COURSE 3) Stereochemistry of Organic Compounds

: 1) Topics in Organic Chemistry 2) Applied Organic Chemistry

# Campus Placements

· Atul Pvt. Ltd.

Reliance Industries Ltd.

Zydus Cadila Healthcare Ltd.

Piramal Discovery Solutions.

Shri Ram Fibers Pvt. Ltd.

· Bunge India Pvt. Ltd.

Lupin Pharmaceuticals

Sun Pharmaceuticals Ind. Ltd.

Rallis India Ltd

Aalidhra Pharmachem Pvt. Ltd.

Cadila Pharmaceuticals Ltd.

Amuna Pharmaceuticals

J. B. Chem. & Pharma, Ltd.

IPCA Laboratories

Meghmani Organics Ltd.

Amoli Organics Pvt. Ltd.

o2h Discovery Pvt. Ltd.

Alembic Ltd.

Rubamin Limited

Aarti Industries

Asian Paints

SynZeal Research Pvt. Ltd

Apothecon Pharmaceuticals

Dishman Pharma. & Chemicals

Claris Life sciences Ltd.

Intas Pharmaceuticals Ltd

Aventis Pharma Ltd.

Hemarsh Technologies

Torrent Pharmaceuticals Ltd.

Alentris Research Pvt. Ltd.

ADMISSION

FOR NEXT ACADEMIC YEAR WILL START

FROM MAY





#### The Charutar Vidya Mandal (CVM) University

Top Ranked College listed between 101-150 (2022), 151-200 (2021, 2023) and 201-250 (2024) in NIRF (National Institutional Ranking Framework) by MHRD (Ministry of Human Resource Development), Government of India, New Delhi

1st Rank (2020, 2021, 2022) & 3rd Rank (2019, 2023) College among all Colleges of Gujarat in GSIRF (Gujarat Institutional Rating Framework) by KCG (Knowledge Consortium of Gujarat), Department of Education, Government of Gujarat







#### SALIENT FEATURES......

- Four semester master's degree programme as per Choice Based Credit System (CBCS).
- The course is started in 1990 and getting excellent response from industries.
- · Well equipped laboratories with facilities for polymer synthesis, processing and testing.
- Taught by well-qualified and experienced Science and Engineering faculty.
- Students can pursue Ph.D,M.Tech. etc. programme after M.Sc. degree
- Students can start their own small-scale industries.
- Library is rich with latest edition of books & periodicals.

- Project work on recent developments in the area of Polymer Sciences & Technology.
- Summer training for every student in well-known Polymer Industries.
- Invited expert lecturers and visit to various industries are conducted regularly.
- Visit to various Polymer Industries, National Seminars, Conferences and Exhibitions.
- Wide range of opportunities are available for Polymer Science & Technology postgraduates in industries and research centres.
- Placement for all students through campus interviews in related industries and organization.

#### Course Contents: M.Sc. POLY MER CHEMISTRY

Semester I **Core Papers** 

**Electives** 

**Practicals** 

Concepts in Polymer Chemistry
 Industrial Polymers

Polymer Materials & Recycling

Industrial Chemistry - I

Concepts in Materials Science

: • Industrial Analysis - I

Industrial Analysis - II

Semester III **Core Papers** 

: • Polymer Rheology • High Performance Polymers

Polymer Composites

**Electives** : • Analytical Techniques

Selected Topics in Polymer Chemistry

**Practicals** Polymer Processing & Testing – II • Polymer Synthesis Semester II

**Core Papers** 

: • Polymer Characterization • Polymer Additives

Polymer Processing

**Electives** · • Industrial Chemistry - II

Biophysical Chemistry

**Practicals** · Polymer Processing & Testing - I

Identification of Polymers

Semester IV **Core Papers** 

Rubber Technology
 Petrochemicals

Polymer Blends & Adhesives

**Electives** 

: • Environmental Science

Technology of Essential Oils Surfactants & Cosmetic Products

**Practical** : • Project Work



#### 100% PLACEMENT FOR ALL STUDENTS

#### **Eligibility for Admission**

A candidate who has obtained the degree of Bachelor of Science of the University or of any other University recognized as equivalent thereto with Industrial Chemistry, Industrial Chemistry (Vocational), Chemistry, Applied Chemistry, Polymer Science, Industrial Polymer Chemistry or any other branch of Chemistry or Chemistry as one of the major subject or have studied at least two theory subjects of Chemistry/Industrial Chemistry during graduation and also with Pharm / B Tech / BE., can be admitted to the examination for the degree of M.Sc. in the respective subject (Polymer Chemistry)



Laboratory Facilities: • Universal Testing Machine • Dart Impact Tester • HDT & VSP Tester • MFI Tester • Taber Abrader • Brookefield Viscometer • Pelletiser • Digital Balance • Hand Blow moulding Machine • Oven • Two Roll Mill • High speed mixer • Injection moulding Machine (Automatic) • Injection moulding Machine (Manual) • Compression moulding Machine • Cutter • Film Plant • Durometer Hardness

- Rockwell Hardness Muffle Furnace Izod / Charpy Impact Tester Grinder Volume & Surface resistivity Constant Temperature Bath
- Elmendorf Tear Tester Barcol Hardness Tester Centrifuge pH meter Conductometer Calorimeter

Campus Placements: • IDMC, V.U.Nagar • Reliance Industries Ltd. • Indofil Ltd. • Suzlon Energy Ltd. • Styrolution Polymers Ltd. • Du Pont India Ltd. • PI Industries Ltd. • Acrysil Ltd. • Tipco Industries Ltd. • Enercon India Ltd. • Supreme Industries Ltd. • Anchor Electronic and Electricals • Solvay Specialty Polymers Ltd. • Gharda Chemicals Ltd. • Asian Paints Ltd. • Bayer Materials Pvt. Ltd. • Lanxcess Ion Exchange Ltd. • Loxim Industries • Bhansali Polymers Ltd. • Atul Ltd. • BASF India Ltd. • Gujarat Fluoro Industries Ltd. • Apollo Tyre Ltd.

• Polycab Ltd. • Shree Rama Multitech Ltd. • Shaily Eng. Plastics Ltd. • Crest Composites Ltd. • Grasim Industries Ltd., etc.

ADMISSION

FOR NEXT ACADEMIC YEAR WILL START

FROM MAY

Institute of Science & Technology for Advanced Studies and Research (ISTAR)

P.O. Box # 13, Near Post Office, Mota Bazar, Vallabh Vidyanagar- 388120, Dist. Anand, Gujarat, India Phone: 02692 - 234955 (O), 9687653359





# Charutar Vidyamandal's

# **INSTITUTE OF SCIENCE & TECHNOLOGY STAR** FOR ADVANCED STUDIES & RESEARCH

(Accredited "A" grade by NAAC & KCG)

(Recognized by Section 2(f) & 12(B) of UGC Act. by University Grant Commission, New Dehil)

M. Sc. (Real Estate Valuation)

M. Sc. (Plant & Machinery Valuation) Affiliated to CVM University, Vallabh Vidyanagar, Anand, Gujarat.

#### SALIENT FEATURES.....

- A four semester full time post graduate degree course in valuation
- First course in India of its kind in the field of valuation
- It is a multi-disciplinary course, specially designed to cater to the needs of the Valuation Profession
- Professionals from the field of valuation and other allied field are invited as Visiting Faculty
- M.Sc. Valuation course curriculum covers the syllabus of valuation examination notified by Insolvency and Bankruptcy Board of India (IBBI)
- Post Graduate degree holder in Valuation can play vital role as valuer under Companies Act, 2013 and IBC 2016 and REITs
- P. G. degree holder in Valuation can get registration under Wealth Tax Act with experience of only Two years as against Ten years for graduate engineer in the respective discipline



### Course Content

# M. Sc. (Real Estate Valuation)

Principles of Economics, Book Keeping and Accountancy, Elementary Surveying and Eng. Drawing, Introduction to Statistics, Principles of Valuation, Ele. of Laws and Jurisprudence, Comprehensive Viva-Voce

Prin. of Insurance & Loss Assessment, Building Technology- I, Law – I, Law - II, Valuation of Real Estate-I, Urban Land Economics, Comprehensive Viva-Voce

Environmental Impact Assessment, Finance, Busi. & Mgnt. Studies, Town and Regional Planning, Building Technology-II, Valuation of Real Estate-II, Maint., Repairs & Dila of Bldgs And Real Estate Management, Report Writing, Comprehensive Viva-Voce

#### Semester IV

Field Work and Seminar, Project Work, Comprehensive Viva-Voce

# M. Sc. (Plant & Machinery Valuation)

Principles of Economics, Book Keeping and Accountancy, Elementary Surveying and Eng. Drawing, Introduction to Statistics, Principles of Valuation, Ele. of Laws and Jurisprudence, Comprehensive Viva-Voce

Prin. of Insurance & Loss Assessment, Principles of Machine Tools & Factory Equipment, Legal Study - I, Valuation of P&M - I, Valuation of P&M - II, Industrial Processes, Comprehensive Viva-Voce

#### Semester III

Environmental Impact Assessment, Finance, Business & Management Studies, Town and Regional Planning, Legal Study - II, Valuation of P&M - III, Valuation P&M - IV, Report Writing, Comprehensive Viva - Voce

#### Semester IV

Field Work and Seminar, Project Work, Comprehensive Viva-Voce











# **Eligibility for Admission**

Bachelor Degree Examination preferably in commerce, science, engineering, architecture, mathematics, statistics, economics, law, management and agricultural science of this University or an examination recognized as equivalent thereto. [Such as Section A & B Examination conducted by the Institution of Engineers (India) and Section A & B of Association Membership Course conducted by The Institution of Mechanical Engineers (India)]

# Career opportunities

- → Multinational firms, Semi-Government organization like HUDCO, Professional firms who deal with Valuation, and Independent Valuers are keen to absorb the Master degree holders in Valuation
- → A Master Degree holder in Valuation can start career as a Professional Valuer and can establish own practice at a young age

FOR NEXT ACADEMIC YEAR WILL START





(Accredited "A" grade by NAAC)

(Recognized by Section 2(f) & 12(B) of UGC Act. by University Grant Commission, New Delhi)

1st Rank among All Colleges of Gujarat by KCG (GSIRF) – 2021



# M.Sc. SURFACE COATING TECHNOLOGY

**Constituent College of CVM University** 

#### **About the Course:**

The course has been framed to cater highly skilled technocrats for the fast growing field of Surface Coating Technology which grows hand in hand with the growth of Construction Industry (Housing & Commercial buildings), Infrastructure development (Ports, Offshore structures, Pipelines, Bridges etc), Automotive Industry, Ship building Industry, Heavy Engineering Industry, Packaging industry (Printing Ink) etc to offer protection & aesthetics to these assets.

#### **Unique Features:**

- Only course available in Gujarat and unique in India that is available for science and engineer graduates
- The 2 years (4 Semester) curriculum includes the subjects related to the technology for the manufacturing & application of the Surface Coatings and analysis of their performance properties
- Summer In-plant Training: Every year in the month of May-June, each students need to go for summer in-plant training for the period of 6 weeks at Paint, Coating and Allied Industries in different parts of the country.
- Arrangement of lectures of the professionals from the various fields of Coating Industry.
- Placement: Surface Coating Technology department has Strong Academic –

**Industry interaction** which supports in **In-plant training and** Almost 100% on and Off Campus placement with handsome salary in National and MNC Paint and Coating Industries.

- Visit and participate in National & International Seminars, Exhibitions and Conferences and various Coating Industries
- SICART Training: Three Days Sophisticated Instruments Certificate training were given to each student every year.
- Research & Testing facility available
- Conducting Corporate Training for Civil Engineers like GNFC, IFFCO, Kribhco etc. and consulting for paint application
- M/S Asian Paints Charitable trust, Mumbai have been kind enough to give scholarship to our M.Sc. (SCT) students

# Course Contents: M.Sc. SURFACE COATING TECHNOLOGY

#### Semester I

- Chemistry & Technology of Polymer Science
- Chemistry & Technology of Inorganic Pigments
- Surface Chemistry & Surface Engineering
- Practical: Analysis of Pigments, Oils & Resins
- Practical: Analysis of Architectural Coatings
- Comprehensive Viva-Voce
- Process Control & Instrumental Analysis
- Mechanical Engineering for Coating Technologist

#### Semester II

- Technology of Resins for Surface Coatings-I Technology of Resins for Surface
- Chemistry & Technology of Organic Pigments, High Performance Pigments, Additives & Solvents
- Coating Properties & Analysis of Coating
- Practical: Instrumental Analysis and Analysis of Additives, Solvents & Raw material for resin
- Practical: Analysis of Industrial Coatings & Inks
- Comprehensive Viva-Voce
- Chemical Engineering Operations
- · Economics & Industrial Management

#### Semester III

- Technology of Resins for Surface Coatings—II
- Technology of Paint Manufacturing
- Technology of Architectural Coatings and Industrial Coatings
- Practical: Processing of Surface Coatings I
- Practical: Processing of Surface Coatings II
- Comprehensive Viva-Voce
- Chemical Reaction Engineering
- Technology of Packaging and Printing Inks

#### Semester IV

- Coating Application & Specialty Coatings
- Corrosion Technology & Heavy Duty Protective Coatings
- Technology of Construction Chemicals
- Practical: Project Work
- Comprehensive Viva-Voce
- Marketing Management
- Environmental Management

#### **Eligibility for Admission**

A candidate who has obtained the degree of Bachelor of Science of the University or of any other University recognized as equivalent thereto with Industrial Chemistry, Industrial Chemistry (vocational), Chemistry, Applied Chemistry, Polymer Science, Industrial Polymer Chemistry or any branch of Chemistry or Chemistry as one of the major subject or have studied at least two theory subjects of Chemistry/Industrial Chemistry during graduation and also with Pharm / B Tech / BE., can be admitted to the examination for the degree of M.Sc. in the respective subject (Surface Coating Technology).

Programme outcomes will provide a platform to the students to interact with leading teachers, scientists, and industry practitioners. **The Post-graduates** 

- Will have sound knowledge of principles involved in the area of paint/surface coatings and will play a major role in development of coating industries.
- Will adapt to the various formulations/manufacture of coatings as per the changing technologies and requirements of society.
- Will design and deploy paints/coatings that meet the needs of individuals and the industries.
- Acquainted with the latest development in Surface Coating fields to enable them to take up higher studies, research & developmental work and entrepreneur.
- Students get placement in Research & Development / Quality Assurance / Production / Technical Sales Services / Paint Application
- Students get absorbed by Paint Manufacturing Industry / Resin Industry / Pigment & Additive Industry / Printing Ink Industry / Paint Shops / In Academic and Research Institution / Paint and Coating Testing Laboratory

ADMISSION

FOR NEXT ACADEMIC YEAR WILL START

FROM MAY

ISTAR

Institute of Science & Technology for Advanced Studies & Research (ISTAR), Mota Bazar, Vallabh Vidyanagar - 388120, Dist. Anand, Gujarat, India. Phone: (02692) 234955, Telefex: (02692) 234955 E-mail: office.istar@cvmu.edu.in, Website: www.istar.edu.in

Please Call for Further Details: Dr. Mayank Patel: 9426598586, Dr. Kalpesh Patel: 9825670971

Email- headsct@istar.edu.in