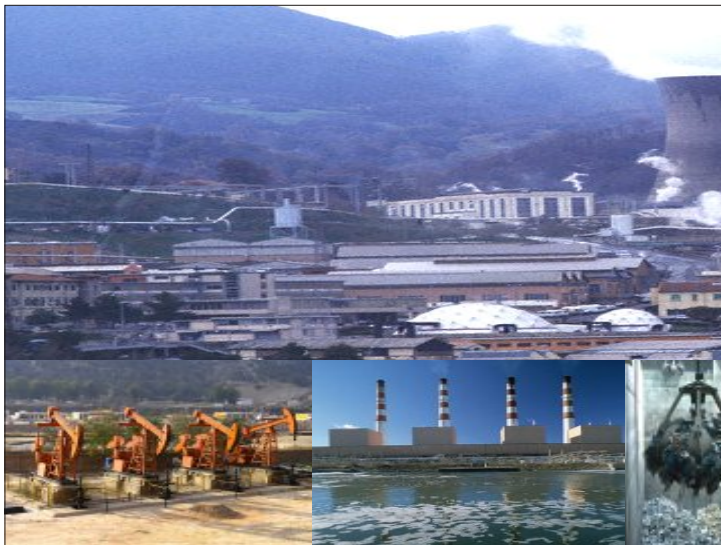




Post Graduate Programme in Environmental Engineering



BVM Engineering College/ ISTAR
Vallabh Vidyanagar



The Campus and Institutes

Two of the chief social reformists Bhailalbai an engineer and Shri Bhikhabhai an educationist volunteered for a stupendous task of establishing an educational township where the entire spectrum of education right from primary education to the highest of doctoral and post-doctoral studies would be available in the serene rural set up. Sardar Patel not only heartily approved it, but also managed to get blessing of Mahatma Gandhi under the Trust named as Charutar Vidya Mandal (CVM) since 03.03.1946.

Birla Vishvakarma Mahavidyalaya (BVM) Engineering College and Institute of Science and Technology for Advanced Studies & Research (ISTAR) are managed by Charutar Vidya Mandal (CVM), registered Charitable education trust which manages 38 Institutes from primary level to doctoral level. The BVM is the first degree Engineering college of the Gujarat State, inaugurated on 14th June 1948, which is completing 60 years of its existence during this academic year. It has produced more than 16,000 graduates.

ISTAR is offering various PG courses in Science and Technology wherein Engineering PG programmes are run jointly with BVM.



The institutes are committed to train the mind of budding engineers for mastering the skill in the area of engineering and technology for harnessing the technology to produce competent, creative, imaginative engineers and techno-managers towards profitable and productive processes of economic growth and social well-being in context of present scenario of world trade and globalization. The PG Programmes offered in Engineering and Technology are recognized by AICTE and affiliated to Sardar Patel University Vallabh Vidyanagar.

Master of Engineering in (1) Environmental Engineering (2) Structural Engineering (3) Construction Engineering & Management (4) Machine Design (5) Computer Engineering and Master of Technology (6) Transport System Engineering.

Department of Civil Engineering and Department of Structural Engineering are offering following PG Programmes with Number of seats

- | | |
|-------------------------------------|----|
| (a) Master of Engineering in | |
| • Environmental Engineering | 18 |
| • Structural Engineering | 18 |
| • Const. Engineering & Management | 18 |
| (b) Master of Technology in | |
| • Transportation System Engineering | 18 |

Eligibility Criteria for admission to M.E. (Env)

- B.E.(Civil)/ B.E.(water Resources Eng)/B.E (Chemical)
- B.E.(Mech/Elect) with minimum 5 years relevant experience
- Min.50% marks or CPI 5 on 10 point scale

Important Features of the Programme

- This programme is approved by All India Council of Technical Education (AICTE) and affiliated to Sardar Patel University
- Present intake : 18 students
- Duration : 4 Semesters consisting of minimum 2 years
- Dr. B P Swadas Gold Medal is awarded by Sardar Patel University to the student who secures highest CPI
- At the end of two semesters the students undertake industrial training for two months and submit detailed report of the work done which is reviewed by Faculty
- The students are also required to undertake dissertation work (Research Project) in the third semester of his studies and complete the same within minimum one year

Unique Features of the Programme

- Continuous interaction with the industry as well as consulting engineering firms
- 3rd semester Industrial training provided where the student resides or in proximity of residence
- Arrangements are made as far as possible to facilitate dissertation work in the industry of choice of the student
- 100% Job is guaranteed Most of the time the students are absorbed where they get training

Career Development Opportunities

- In the academic field where the minimum requirement for recruitment to the post of Lecturer is M.E.
- In the State Pollution Control Boards and Central Pollution Control Board in protection of Environment or in Government in the Department of Environment & Forest
- In the industries generating aqueous pollution
- In the Consultancy field as an Environmental Consultant (to be approved consultant the SPCB requirement is M.E. (Env) for planning, designing, constructing, commissioning Sewage or Industrial Effluent Treatment Plants or preparation of Environmental Impact Assessment Statement for the projects proposed to be undertaken

- In the field auditing as an Environmental Auditor Schedule-2 wherein out of 4 members, one must be M.E (Env) or B.E Civil with elective as Environmental Engineering

Course Curriculum

SUBJECTS COVERED IN FIRST SEMESTER

a. EV 561 Fundamentals of Environmental Chemistry

The subject covers Basic Concepts of General, Physical, Organic, Aquatic Soil Environmental Chemistry, Methods of Chemical Analysis and Practical based on the above methods of chemical testing

b. EV 562 Environmental Microbiology & Environmental Mathematics

The course is broadly designed to cover Characterization of Micro organism Microbial metabolism, Control of microorganisms, Environmental microbiology, Communicable diseases, Practical based on the above and under Part II Introduction to Stastical Analysis is covered.

c. EV 563 Water & Waste water Treatment-I

This subject enhances various physico- chemical processes for water quality control like Aeration, Sedimentation, Coagulation and Flocculation, Filtration, Disinfection, Ion exchange and Adsorption. It also includes Specific Treatment like control of odour, colour and taste, Fluoride, Fe & Mn and such other contaminants. Practical and tutorials based on the above have been designed for developing confidence in the minds of students

d. EV 564 Water & Waste water Treatment-II

This course aims at imparting the knowledge in Reactor Design, Wastewater Treatment fundamentals, Biological Treatment Processes, Sludge Treatment including Advanced Treatment with specific emphasis on Practical and tutorials based on the above

e. EV 565 Environmental Sanitation, Health and Safety

This subject encompasses Radiation Protection, Noise Pollution & Control, Thermal Pollution & Control, and Introduction to Occupational Health, Safety Engineering, and ISO 14000 Environmental Standards

SUBJECTS COVERED IN SECOND SEMESTER

(1) EV 571 Air Pollution Control

This course is designed to train the students in Methods of Measurements of Air pollutants, Ambient Air quality

Standards, Transport of Air pollutants, Height & Design of Stack, Control of Particulate Matters, Gaseous pollutants, Vehicular Pollution., Practical have also been based on the above

(2) EV 572 Industrial water & waste-water Treatment-I

Under this subject code the students learn Industrial Water Treatment, Saline Water Conversion, Economic Aspects of Industrial waste Treatment, Waste Reduction, Sludge Treatment, Industrial Waste Treatment and Practical based on the above to suit the specific requirements of the industry

(3) EV 573 Environmental Sanitation, Health and Safety-II

This subject comprises of Part I Solid Waste Management covering Types, sources, Characteristics, volume reduction, storage and collection of solid waste, Solid waste Transfer and Transportation, Processing on site and off site, Treatment : Chemical and Biochemical Incineration and Pyrolysis, Composting , Heat recovery, Biological Processes Composting and composting type plants, Reuse and recycling of solid waste, Ultimate disposal Sanitary land fills Ocean dumping, Relevant legislations and Part-II Hazardous Waste Management covering Types, Characteristics, sources and health effects, Environmental impacts, Hazardous waste Transportation, treatment and disposal as well as Part III covering Relevant legislation including safety, Personal protective equipment and such other matters and Practical based on the above

(4) EV 574 Design of water & wastewater Systems

The subject encompasses Design of Water Supply System: Basic design considerations, water intake, Screening and Aeration, water conveyance flow measurement, Pumping, Coagulation, flocculation, Sedimentation, filtration, disinfection, defluoridation, clear wells and distribution system. It also covers Design of Wastewater Systems - Basic design considerations, Wastewater Treatment unit operation & processes, process diagrams, plant lay out & Hydraulic Profile, design of intercepting sewers, Screening, intake, Screening, pumping station , Grit removal, primary Sedimentation, Biological waste treatment, sludge treatment facilities and Special Design Units like RO ,Electro dialysis etc

(5) EV 575 Environmental Impact Assessment

The course lay stress on important issues like Environmental Setting, Prediction and Measurement of impact on physical biological and socio economic

environment, Methods of Analysis of Impact on Environment, Public Participation, Practical Considerations including specific projects / presentation in form of seminar, Location of Industries, Environmental legislation in detail including Environmental Audit

SUBJECTS COVERED IN THIRD SEMESTER

(1) EV 684 Elective- Membrane Technology

Students learn in detail Membrane Processes, Electro dialysis, Reverse osmosis, Design considerations of Electro dialysis and Reverse osmosis and costing, RO Membrane Fouling, Other membrane Processes

Other Elective subjects offered are as under:

EV 681 Air Pollution Control Equipment

EV 682 CAD for Environmental Engineering

EV 683 Pollutant Transport Modeling

EV 684 Membrane Technology

EV 685 Hazardous Waste Management

EV 686 Environmental Ethics

(2) EV661 Seminar based on Industrial Training

The students are required to take industrial training in the third semester under the guidance of faculty and at the end of training they are required to present a seminar on the actual work done by him or her

(3) EV 671 Dissertation Part-I

This is the part of dissertation wherein the students are required to undertake extensive literature survey and explain the need of the study proposed by him or her to the fullest satisfaction of the recognized guide

SUBJECTS COVERED IN FOURTH SEMESTER

(1) EV 672 Dissertation part II

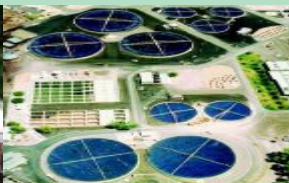
This is the ultimate phase of the dissertation wherein the student actually conducts the series of experiments to come to conclusion on the hypothesis till the satisfaction of the guide. The detailed comprehensive research report is submitted as well as presented before the examiners

(2) EV 673 Advances in Environmental Engineering:

This course of study is based on recent investigations made by the renowned scientists and advanced development in the field not covered under any subject code. It at present includes Bio remediation, Removal of inorganic and organic colloidal and dissolved matters, Bio-diesel, Electronic waste management, Wastewater filtration, Adsorption, Wastewater disinfection, distillation , Biodegradation of xenobiotic organic chemicals etc.

Faculty involved in teaching

Faculty	Designation	Specialization
Prof. J H Patel	Head CE Coordinator	Water and Waste water Quality and Treatment, Solid waste management , EIA and Legislation
Prof.Dr. K N Sheth	Co-coordinator	Membrane technology, water treatment, environmental safety, hazardous waste management, Design of Industrial waste water treatment Plants, EIA and Legislation
Prof. S M Thaker	Asstt Prof.	Industrial Water Waste Water treatment, Environmental Microbiology, Air Pollution Control
Prof. Deepak Vyas	Asstt.Prof.	Environmental Sanitation, Air Pollution Control
Prof. Dr.L F Rabari Dr.Akshya Gupte	Adjunct.Prof Lecturer	Environmental Chemistry Environmental Microbiology and Biochemistry
Mrs. Reshma L Patel	Lecturer	Design of Water Supply and Waste water Treatment System
Ms. Neha R Patel	Lecturer	Water and Waste water Quality
Dr. T. A. Desai	HOD Mathematics	Environmental Stastics and Mathematics



Contact

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