



# Master in Construction Engineering & Management Programme



**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

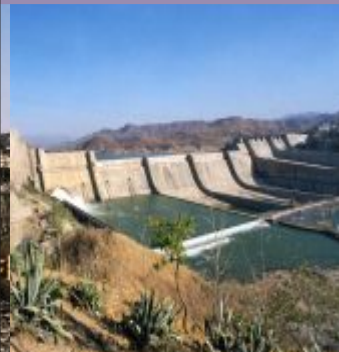


and technology for harnessing the technology to produce competent, creative, imaginative engineers and techno-managers towards profitable and productive processes of economic growth and social well-being in context of present scenario of world trade and globalization. The PG Programmes offered in Engineering 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

- B.E.(Civil) with minimum 5 point on 10 point scale or min. 50% marks

## 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
- Charutar Vidya Mnadal Gold Medal is awarded by Sardar Patel University to the student who secures overall highest marks/CPI
- The students are required to undertake dissertation work (Research Project) in the third semester of his studies and complete the same within min one year or max two years duration.

## Unique Features of the Programme

The M.E.in Construction Engineering and Management is been offered since 1996. This course is a unique combination of construction engineering and management. This course deals with advanced construction technologies with skills required as a manager for successful completion of large projects. The courses offered in programme cover a wide range of areas such as project management techniques, advanced construction methodologies for various structures, advancements in materials of construction, Financial management, Contractual laws and Arbitration, Operations research and Value engineering. Licensed version of MS Project software is available.

## Course Curriculum

- a. CM 531: Construction Management methods and tools

This course covers overview of CPM, PERT and its applications, Resource based networks for

scheduling, monitoring and updating, LOB techniques, network crashing and time-cost trade-off. It also covers project management software overview and precedence networks and GERT.

b. **CM 532: Construction Techniques**

This course is designed to give know-how of various construction operations and recent developments and implementation of mechanization in it. It covers concept of modular co-ordination, pre-fabrication and various erection technologies currently used in construction industry. It also deals with special types of concretes, concreting methods and safety aspects in construction.

c. **CM 534: Advanced Civil Engineering Materials**

This subject covers classification, specifications, properties and tests for various building materials. It also covers recent developments in materials of construction from different aspects.

d. **CM 535: Construction Equipment - Selection & management**

The course covers classification, operational characteristics, production rates and selection criteria for equipments of different construction activities. It also covers new trends in equipments. Areas like equipment procurement, purchase and import procedures are also dealt with. Preventive maintenance & depreciation problems of machines are also emphasized.

e. **CM 536: Contract Management & Arbitration**

The course is designed to give overview of estimation, billing, analysis of prices, contract management, tendering procedures, laws of contract, potential contractual problems, contract documents, arbitration and its use in construction industry. The subject also deals with construction specifications, B.O.T, risk management and insurances.

f. CM 541: Project Implementation & Material management

This course is designed to cover work study, work break down structures, performance monitoring techniques, Resource allocation, time and motion studies, inventory models for materials, deterministic and probabilistic models and its applications, EOQ model, ABC analysis, wastage management and computer applications based on available software.

g. CM 542: Construction Finance

The course covers basic financial concepts like: capital, revenue, financial accounting on construction projects. It covers the accounting processes like double entry system, book keeping system, journal, ledger etc. It deals with preparation of profit and loss account and balance sheet. It also covers financial management aspects like cash flow analysis, ratio analysis and factors affecting working capital.

h. CM 544: Personnel Management

This subject is planned to cover the basics of personnel management, labour laws, role of personnel management in construction industry, HRD-growth, role and functions, manpower estimation for projects, recruitment methods, training, placement, financial compensation, legal aspects etc.

i. CM 545: Operations Research & Decision theory in Construction

It covers history, phases & classification of Operations Research, Decision theory, Game theory, Linear programming methods, Simplex method, Transport & assignment models, Queuing theory and waiting time- application to industries, Introduction to dynamic programming, Monte- Carlo simulations etc.

j. **CM 546: M&R Projects & its management.**

This subject covers durability of structures, maintenance, repair, retrofitting & rehabilitation of structures, structure failures, life serviceability & strength of building materials. It also deals with corrective maintenance like: cracking, corrosion, leakage and other forms like deterioration, investigation, testing and specifications for alterations. It deals with management of M&R Projects.

k. **CM 631: Management Information Systems**

This subject is designed to cover the concept of MIS, role of information in decision making, decision making under different conditions, designing MIS for a company, Integrated construction management information system, types of systems, DBMS, Nolan stage model and case studies.

l. **CM 641: Value Engineering**

This subject deals with fundamentals of Value engineering, overview of different phases of VE, job plan, FAST programming, cost control theory, life cycle cost theory, environment impact assessment with VE approach and case studies relevant to construction industry.

m. **CM 633: Dissertation part-1**

The student has to carry out extensive project work related to one of the subjects studied. Report to be prepared and submitted and they have to present the same as a seminar in front of the panel of juries.

n. **CM 642: Dissertation part-2**

The student has to further elaborate the work related to the project by taking case studies from the real life on one of the studied subjects. Extensive work to be done, report to be prepared and submitted and presented in front of the panel of the juries.

## Faculty involved in teaching

Faculty	Designation	Subject/Area
Shri. J.J.Bhavsar	Co-ordinator	Construction management methods, Operations research, Construction equipments, M&R Projects.
Shri. V.A.Patel	Asst.Professor	Contract management & Arbitration
Shri. A.N.Bhavsar	Lecturer	Construction management methods, Value Engineering, M&R Projects.
Shri.H.C.Vakharia	Lecturer	Management Information Systems
Shri. Rajiv Bhatt	Asst.Professor	Management Information Systems, Contract management & Arbitration, Project Implementation.
Smt. C.M.Vyas	Lecturer	Material management, Construction techniques.
Shri.C.V.Kulkarni	Visiting Faculty	Civil Engineering Materials.
Shri R.M.Patel	Professor	Construction Finance
Shri. Manish Joshi	A/cPractitioner	Construction Finance
Shri. M.S.Shukla	Management Consultant	Personnel Management

### Contact Person

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