BRAHMDEVDADA MANE POLYTECHNIC, BELATI, SOLAPUR.

STHAPATYA

15th August 2025

VOLUME 13
ISSUE 1

PACKAGE INCLUDES:

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CIVIL ENGINEERING DEPARTMENT

https://bmpsolapur.org/

VISION OF DEPARTMENT

• To cultivate the leaders in the Civil Engineering field bearing high technical competence to meet future challenges.

MISSION OF DEPARTMENT

• To prepare students for the challenges in the Civil Engineering industry by infusing Skill-based Methodology.
• To encourage self-development of the students through Curricular and Co-curricular activities.
• To promote high Moral and Ethical values among the students to become responsible citizens.

About us:

Department of Civil Engineering was started in the academic year 2009-2010 to promote high-quality education in the field of civil engineering. The academic activities of the department emphasize a deep understanding of fundamental principles, the development of the creative ability to handle the challenges of civil engineering, and the analytical ability to solve interdisciplinary problems.

The department currently offers a Diploma in Civil Engineering program following the Maharashtra State Board of Technical Education Mumbai curriculum with a sanctioned intake of 60 students. The curriculum broadly covers the engineering subjects of related fields such as Surveying, Building Construction Materials, Geotechnical Engineering, Structural Analysis and Design, Hydraulics and Water Resources Engineering, Environmental Engineering, and Highway Engineering.

Affiliations and Approvals:

Brahmdevdada Mane Polytechnic, Belati is approved by All India Council of Technical Education, New Delhi, Directorate of Technical Education Maharashtra state, Mumbai and Maharashtra state board of Technical Education, Mumbai. Brahmdevdada Mane Polytechnic is offering 5 diploma programs.

Accreditation:

Civil Engineering Department of Brahmdevdada Mane Polytechnic, Belati is accredited in 2025 by National Board of accreditation, New Delhi

FROM PRINCIPAL DESK....

Dear Students, Faculty, and Esteemed Readers!!

It gives me immense pleasure to present this edition of our college magazine, a reflection of the vibrancy, creativity, and intellectual curiosity that define our academic community. As we move forward into a world of constant change, our college remains a beacon of knowledge, nurturing not only the minds but also the hearts of our students.

Let this magazine serve as a reminder of the strength and unity we share as a community. May it inspire each of us to continue striving for greatness, to embrace challenges as opportunities, and to work together towards a future that is bright with possibility.

Thank you for your continued dedication and commitment. I look forward to the many more milestones we will achieve together.

Warm regards,

Yours Truly

Dr. S. B. Joshi

(Ph.D.(Mech. Engg.), F.I.E., C.E. (Ind.))

PRINCIPAL

FROM HEAD OF DEPARTMENT DESK....

Dear Esteemed Readers!!

Greetings!! It gives me immense pleasure that the Department of Civil Engineering is coming out with its VOL.13 ISSUE 1. of Civil Engineering Magazine.

The Magazine showcases all the activities of the department along with the articles of the students. It is a forum to connect with all stakeholders internal and external and certainly plays an effective role in creating a sense of belongingness amongst faculty and students. I Congratulate Civil Engineering Students and Faculty for the splendid show and wish all the success to the editorial team. We would endeavor to achieve the mission and vision of the department of civil engineering and help our students to become leaders of tomorrow.

Prof.S.D.Kandale
(H.O.D.)
Civil Engg.Department
Brahmdevdada Mane Polytechnic

FROM EDITORS DESK....

Dear Readers,

Welcome to this edition of our college magazine! It is an exciting time as we continue to celebrate the spirit of creativity, learning, and unity within our vibrant campus. This magazine serves as a reflection of our collective efforts, the diverse voices that make up our college, and the remarkable experiences that define our journey.

Each page of this magazine has been crafted with dedication and passion by the editorial team and contributors, showcasing a wide range of topics from academic achievements to cultural events, and from personal stories to thought-provoking essays. It is a platform where we can share ideas, explore new perspectives, and connect with each other through the written word.

I extend my heartfelt thanks to Hon. Principal Dr S.B.Joshi and Head of the department Prof. S.D.Kandale for giving me this opportunity to be an editor of this issue. I also thankful to all students who contributed for this magazine Their creativity, insights, and hard work are what make this magazine a true representation of our college spirit.

As you flip through these pages, I hope you find inspiration, joy, and a sense of pride in the stories that unfold here. Let us continue to create, inspire, and build a community that values growth and learning.

Happy reading!

Prof. D.P.Gawade
(Lecturer in Civil engg Department)
Brahmdevdada Mane Polytechnic

TRAINING AND PLACEMENT CELL

FROM TPO DESK....

Dear Students,

Welcome Everyone As the Training and Placement Coordinator for the Civil Engineering Department, I am honored to share some reflections and insights from our journey over the past academic year. In a rapidly evolving world, where the scope of civil engineering is constantly expanding to meet modern infrastructural and sustainability needs, preparing our students to meet industry demands is more vital than ever.

At the core of our department's mission is the goal to bridge the gap between academic learning and practical application. Our training and placement cell has worked diligently to connect students with meaningful opportunities—whether through internships, industrial visits, skill development programs, or placement drives.

This year, we have seen a noticeable increase in student participation in value-added training sessions, including AutoCAD, STAAD.Pro, . and project management tools. These programs are designed not only to enhance technical competence but also to foster adaptability and real-world problem-solving skills.

Industry collaboration has played a pivotal role in our success. Through MOUs with reputed construction firms, consultancies, and infrastructure companies, we have enabled students to gain hands-on experience on live projects and site visits.

Let us continue to build not only structures—but a better, sustainable future together.

Prof. Dange S.B
(T&P Coordinator in Civil Engineering)
Brahmdevda Mane Polytechnic

EVENTS BY TRAINING AND PLACEMENT CELL

We successfully conducted TPO Lectures for all branches, led by Prof. Rahul Dhagare. & Prof S.B.Dange for academic year 24-25 These sessions provided valuable industry insights, enhanced core technical skills, and guided research on potential employers. Your remarkable engagement and insightful discussions significantly contributed to a deeper understanding

The insightful lecture on "Overview on Sales and Marketing" conducted on March 11, 2025. The session was expertly led by Mr. Madhusudan Bhutada, owner of Shubh Industries

Addressing the students, he said, An "Overview on Sales and Marketing" typically covers the fundamental principles and interconnectedness of these two crucial business functions. It explores how marketing identifies, attracts, and educates potential customers, while sales focuses on converting those prospects into paying customers. Key topics often include market research, product positioning, branding, various marketing channels (digital, traditional), and the overarching goal of driving revenue and achieving business objectives

SCHOOL CONNECT

MSBTE sponsored "School Connect programme 2025-2026" successfully conducted by Bhramdevdada Mane Polytechnic, Belati

By this programme faculties from our Department visited near by schools for counselling, guiding, and creating awareness among 10th class students and their parents about Scholarships, Technical education, various Diploma Courses, and their Scopes in future etc. which is helpful to the students for selecting right path (branch) for bright future. In this campaign our faculties interacted with students.

FACULTY ARTICLES

HYDROPONIC FARMING

Ms.Potdar S.H.
Lecturer at Civil Engg Department

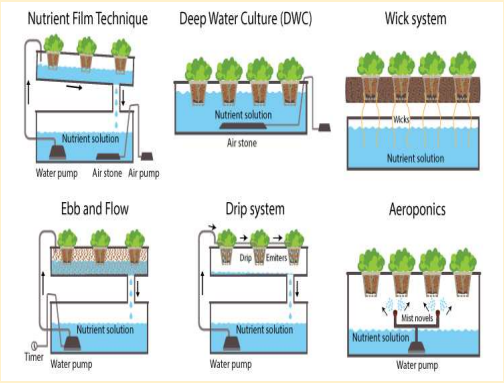
What is Hydro Ponics???

The word “Hydroponics” is derived from the word “hydros” meaning water and “ponos” meaning toil or labour. It is an agricultural technique where plants are grown in a nutrient solution in the complete absence of soil. Here, the soil is substituted by sterile mediums such as
rockwool, vermiculite, sand, gravel, clay pellets, perlite to give stability to roots. Nutrients are passed through roots differently, based on the type of hydroponic system used, oxygen is pumped through, pH level is regulated and sufficient light is provided to carry out photosynthesis. In the areas where natural light is not available, artificial lighting is provided. It is an innovative method of farming and is being widely used now for food production.
The hydroponic farming technique is used in determining the deficiency symptoms of various nutrients in plants and to find out essential nutrients for the plant’s growth and development.
Examples of plants grown hydroponically include: strawberries, tomatoes and lettuce
Hydroponic farming is a method of growing plants without soil, utilizing mineral nutrient solutions in a water-based solvent. This technique allows for precise control over plant nutrition, potentially leading to faster growth rates and higher yields compared to traditional soil-based agriculture.

Core Concept

Hydroponics involves growing plants in a nutrient-rich solution, rather than soil, with the roots either suspended in the solution or supported by an inert medium like perlite or coco coir

Types of Hydroponic Systems



Benefits:

- Faster Growth and Higher Yields:
- Water Conservation
- Reduced Space Requirements
- Pest and Disease Control
- Low Soil Pollution

AUTOCAD-civil3D

Prof.R.R.Tupe
Lecturer at Civil Engg
Department

Introduction

AutoCAD Civil3D is an incredibly powerful computer-aided design software that is equipped with many of the functionalities a Civil Engineer needs. Although it requires some initial time investment to get up to speed, once the main functions are mastered, much of that time is recovered. Below is a general overview of some of the most popular functions.

Surfaces

One of the applications I use more frequently is that of creating a surface. Typically, surfaces can be built based on survey data such as:

- Points
- Polylines
- Contour lines

Once created, surfaces can be modified and overlaid on top of another surface to visualize the existing vs. proposed conditions. Analysis can also be run to create visual maps that colour different parts of the surfaces depending on the magnitude of the elevation or slope, which is particularly useful when evaluating a potential location for dams or reservoirs.

Alignments

If one wants to simulate the path for a proposed pipe, an alignment can be created along both surfaces and then create a profile view of the surfaces along such alignment. AutoCAD Civil3D allows you to modify the data displayed in such a profile to show exactly what is needed, Even more, from that same profile view, the software identifies what the areas of cut and fill are. If a 3D or Volume surface is created, earthworks are automatically calculated

Grading

Another interesting feature used in conjunction with surfaces is grading. Grading comes in handy when a surface for a reservoir for example, needs to be prepared. Grading allows you to extend proposed surfaces up to specific elevations either by setting a distance or slope constraints

Concluding Recommendations

If you are in the early years of a civil engineering career, I highly recommend getting acquainted and proficient using this software. There are great resources online that can help you achieve this state. In fact, there are so many, that I recommend spending some considerable time in looking at what is available

SURVEYING

Prof.P.S.More
Lecturer at Civil Engg Department

Introduction

Surveying is the art of determining the relative positions of different objects on the surface of the earth by measuring the horizontal distances between them, and by preparing a map to any suitable scale. Thus, in discipline, the measurements are taken only in the horizontal plane..

Object of surveying

The aim of surveying is to prepare a map to show the relative positions of the objects on the surface of the earth. The map is drawn to some suitable scale. It shows the natural features of a country, such as towns, villages, roads, railways, rivers, etc. Maps also include details of different engineering works, such as roads, railways, irrigation canals, etc

Uses of surveying

Surveying may be used for the following various applications:

1.To prepare a topographical map which shows the hills, valleys, rivers, villages, towns, forests, etc. of a country.

2.To prepare a cadastral map showing the boundaries of fields, houses and other properties.

3.To prepare an engineering map

4.To prepare a military map showing the road and railway communications with different parts of a country. Such a map also shows the different strategic points important for the defence of a country.

5.To prepare a contour map to determine the capacity of a reservoir and to find the best possible route for roads, railways, etc.

6.To prepare a geological map showing areas including underground resources.

7.To prepare an archaeological map including places where ancient relics exist.

General Principles of surveying

Another interesting feature used in conjunction with surfaces is grading. Grading comes in handy when a surface for a reservoir for example, needs to be prepared. Grading allows you to extend proposed surfaces up to specific elevations either by setting a distance or slope constraints.A nearly equilateral triangle is considered to be the best well-conditioned triangle.The main survey lines are measured very accurately with a standard chain. Then the sides of the triangles are measured. The purpose of this process of working is to prevent accumulation of error. During the procedure, if there is any error in the measurement of any side of a triangle, then it will not affect the whole work.

STUDENTS ARTICLES

Cement Industry

Miss.Pranoti Jagtap
3rd year student at Civil Engg Department

What is Cement???

he manufacturing of Portland cement was started in England around 1825. Belgium and Germany started the cement industries in 1855. America started the same in 1872 while India started in 1904. The first cement factory in India was installed in Tamil Nadu in 1904 by South India Industry Limited and then onwards a number of factories manufacturing cement were started. India is the second largest producer of cement in the world after China. India is followed by Indonesia, Iran, United States, Brazil, Turkey, Russia, Vietnam & Japan.

The main machinery in a cement plant comprises limestone crusher and stacker reclaimer, roller mills for grinding, coal crushers, packers, pollution control equipment, belt conveyers, etc.

It is a fact that the cement industry is a major consumer of the energy using 1.5 percent of the world-fuel and about 2 percent of electricity produced globally. Hence, the attention is paid to find out ways and means to optimize power consumption in raw materials, coal and .

One of such development is the vertical roller mills (VRM) which allows for higher drying capacity with less consumption of power. The coal is also increasingly replaced by the groundnut husk to fire the kiln.

The technology for mining in the cement industry has also been improved. Instead of conventional mining, the process known as the surface mining is adopted. It is carried out without drilling, blasting, and crushing when extracting valuable minerals. The surface mining greatly reduces the vibrations, noise and dust loads.

It is encouraging to note that a few cement companies have changed their philosophy from selling to marketing. The philosophy of marketing always keeps focus on the customer requirements. Some of the leading cement companies have introduced innovative methods of marketing. For instance, the companies have opened chain of office units from where free technical services are given to the customers through qualified and experienced application civil engineers. The companies also use various medias like television, radio, press etc

Irrigation in India

Mr.Pranav Shinde
2rd year student at Civil Engg Department

Being a agriculture dependent country, irrigation is the backbone of India. India is a vast country with a kaleidoscopic diversity if topography, climate and vegetation. The rainfall is generally capricious in its incidence and variable in amount. The distribution of water in India is therefore, very uneven. The rainfall in this country is concentrated usually during four months in a year when there is excess water which flows down unutilized, while in other seasons there is acute shortage of water.

The total of cultivable area in this country is about 185 million hectares. At present about 172 million hectares are under cultivation. Seventy percent of India's vast population depends upon agriculture directly for their living, and therefore agriculture has always been and promises to remain the main industry of India in foreseeable future also. India has large water resources, great rivers systems and vast thirsty tracts of land and is thus designed, so to say by nature for the development of irrigation. This is why India has some of the earliest irrigation works..

Well water irrigation system

Wells are abundantly found in the states of U. P., Bihar, Tamil Nadu, etc. There are various types of wells like shallow wells, deep wells, tube wells, artesian wells, etc. Shallow wells water are not always available as the level of water goes down during the arid season..

Reservoir water irrigation system

In near Hyderabad areas, water-reservoirs are made by constructing structures across the water bodies. Such structures are referred as dams. This system is greatly adopted in the States of Tamil Nadu, Andhra Pradesh, and Karnataka, etc. Even in Northern India , reservoirs of water are constructed for storing water. From all these reservoir, water is carried to the fields through canals.

In many places, rain-water harvesting systems are installed and water is stored in large artificial reservoirs to be used for agricultural purposes

STUDENTS ACHIVEMENT'S

In Academic Year 2024-25, ***Vaibhavi Nikam (CE6I), Shravani Raul (CE6I),*** participated in state level Technical competition of block building at A.G.Patil Polytechnic,Solapur and won Third prize and trophy.

In Academic Year 2024-25, ***Bhagyashree Gajjam (CE4k),*** participated in state level Technical Event of CAD WAR at Shivaji Polytechnic,Sangola and won Runner up prize and trophy.

In Academic Year 2024-25, ***Purva Katare (CE 4K)*** participated in state level Technical competition of block building at A.G.Patil Polytechnic,Solapur

FACULTY ACHIVEMENT'S

M.Tech Completed:

Shri. Tupe R.R., Lecturer in Civil Department of Brahmdevdada Mane Polytechnic has successfully completed his M.Tech in ***Water Resource Engineering*** from B.A.T.U. University Solapur, Maharashtra in July 2024 from Bharat Ratna Indira Gandhi College ,Solapur with 7.81 CGPA

Life Time Membership Achieved:

Shri. Gawade D.P., Lecturer in Civil Department of Brahmdevdada Mane Polytechnic has Achieved Life Time Membership in "***All India Structural Engineer's Council"*** in Year 2024-25

Faculty Achievement Award:

Shri.Kandale S.D. Head of the Civil Department in Brahmdevdada Mane Polytechnic has achieved "***Faculty Achievement Award***" at B.M.P. in year 2024-25 for successfully Publishing Book as a co-author in Building Construction and Material for Diploma Student

Best Teacher Award:

Shri.Gavali D.M. Lecturer at Civil Engineering Department in Brahmdevdada Mane Polytechnic has achieved "***Best Teacher Award***" at V.V.P. Polytechnic, Solapur in year 2024 in recognition of his excellent teaching skills.

FACULTY DEVELOPMENT PROGRAM

Three Days Faculty Development Program (FDP) on **"Applications of Drone Survey in Civil Engineering"** was

successfully conducted on 7th To 9th july organized by the Department of Civil Engineering, of Brahmdevdada Mane Polytechnic Solapur.

The objective of the FDP was to enhance the knowledge and skills of faculty members in the emerging field of drone technology and its practical use in civil engineering.

Participants from various institutes. The program commenced with a welcome address by Principal Dr.S.B.Joshi, Head of the Department, Kandale.S.D, The chief guest Dr.M.S.Deshpande highlighted the importance of integrating modern technology into civil engineering education and practice.

SESSION OVERVIEW:

The FDP was divided into the following sessions:

1. Inauguration Session:

The program commenced with a welcome address by Proncipal Dr.S.B.Joshi, Head of the Department, Kandale.S.D, The chief guest Dr.M.S.Deshpande highlighted the importance of integrating modern technology into civil engineering education and practice.

2. Technical Session I – Introduction to Drones and Surveying Applications:

Speaker: Dr. N. U. Kautkar.

- Overview of UAVs (Unmanned Aerial Vehicles)
- Types of drones used in surveying
- Comparison between traditional and drone-based surveying

3. Technical Session II – Applications in Civil Engineering:

Speaker: Mr.P.V.Kelkar.

Topographical mapping

Construction progress monitoring

Volume calculation for earthworks

Infrastructure inspection (bridges, roads)

4. Practical Demonstration Session:

Live demonstration of drone flying and data collection

Introduction to drone flight software and flight planning

Processing captured images using photogrammetry software.

The Faculty Development Program on "Applications of Drone Survey in Civil Engineering" was a resounding success, fostering technological awareness and practical insights among participants.

CO-CURRICULAR ACTIVITIES

BRAHMSTRA 2025

TARANG 2025

TRADITIONAL DAY

OUR THIRD YEAR TOPPPERS

Zaibunissa M Shaikh

Vaibhavi A Nikam

Namrata D Doke

OUR SECOND YEAR TOPPPERS

Yash H Waghmare

Aniket M Waghmode

Nandani A Firangi