



# TILAK MAHARASHTRA VIDYAPEETH, PUNE

DEPARTMENT OF COMPUTER SCIENCE



# B.SC AI & ML

(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

4 YEARS DEGREE COURSE





# MESSAGE FROM CHANCELLOR & VICE - CHANCELLOR



Dear Students,

TMV is an educational memorial of Lokmanya Bal Gangadhar Tilak, the father Indian unrest and advocate of National Education. Lokmanya Tilak had proposed the four-fold program i.e. Swarajya, Swadeshi, Boycott and National Education. Lokmanya Tilak was of the firm belief that people must be educated if progress is to be achieved. Hence, he advocated that, Education must be widely spread and directed towards building character, dedication and hard work. He wanted Education in all the disciplines, Traditional, Scientific, Technical, Legal, Medical, Agricultural, Trades etc. The sole aim was to provide a much-needed educational facilities in almost all the faculties of knowledge at the undergraduate, post graduate and research levels. Today, the TMV (Deemed to be university under parent trust offers various courses. Quality education is provided to students by the professionally qualified and experience faculty. The departments like Administration, Accounts, Examination, Admission Section, publication and Library are centralized and computerized. These departments are well- equipped with ICT facilities. With a team of dedicated staff, Vidyapeeth is all geared up to serve the student community as per the changing educational environment. The student is the most important person on our campus. We create opportunities and inspire students to achieve their goals. We recognize that in addition to our students' academic pursuits, they lead full, rich lives and need our support. I encourage you to visit our campus and learn more about the opportunities available to you at Tilak Maharashtra Vidyapeeth Trust.

**-Dr. Deepak J. Tilak**  
*Chancellor , TMV*



Dear Students,

It is my pleasure to address you as the Vice Chancellor of this esteemed institution. As you embark on your educational journey, I would like to take this opportunity to convey a message of encouragement and inspiration. We are committed to providing you with an education that is not only academically sound but also prepares you to face the challenges of the real world. Our focus is on providing you with a holistic education that encompasses intellectual, social, and emotional growth. We believe that a well-rounded education is the key to success. As students, you are the future of our nation. It is essential that you take your education seriously and strive to excel in all areas of your academic pursuits. We are here to support you every step of the way and provide you with the resources necessary to achieve your goals. I encourage you to take advantage of the opportunities available to you, both inside and outside the classroom. Participate in extracurricular activities, engage in community service, and build lasting relationships with your peers and mentors. These experiences will not only enrich your education but also prepare you for life beyond the walls of this institution. Remember, your education is a journey, and the destination is not just the degree you earn but the person you become. So, embrace this journey with an open mind, a willingness to learn, and a commitment to excellence. The future is yours, and we are excited to see all that you will achieve. Best wishes for a successful and fulfilling educational journey !

**-Dr. Geetali Tilak**  
*Vice Chancellor*



# WHY AI & ML?

AI & ML: Not Just a Course — A Revolution You Can Lead.

## Empowering Businesses

AI is a competitive advantage that fuels growth and innovation:

- **Predictive Analytics:** Make data-driven business decisions.
- **Automation:** Streamline operations and improve efficiency.
- **Customer Experience:** Chatbots, recommendation systems, voice assistants.
- **Cybersecurity:** Detect threats in real time using intelligent algorithms.

## Shaping Careers of the Future

With AI reshaping industries, skilled professionals are in huge demand:

- 11+ million AI/ML jobs expected in India by 2030.
- High-paying roles like AI Specialist, ML Engineer, Data Scientist, and AI Researcher.
- Essential skills: Programming, problem-solving, statistical modeling, ethical AI.

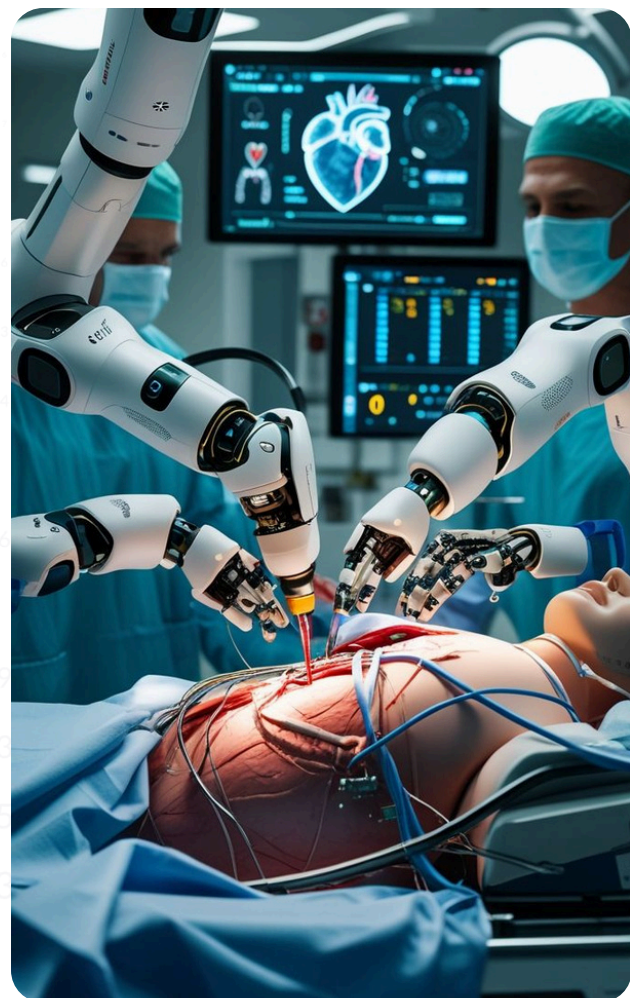
## Powerful Market Trends

- Global AI market projected to reach **\$190 billion** by 2025.
- 54% of businesses report **productivity gains** from AI integration.
- AI adoption is expected to **double by 2026**, led by sectors like finance, healthcare, and retail.

## Why Study AI & ML at the Undergraduate Level?

- Gain future-ready skills from day one.
- Work on real-world projects, internships, and hands-on labs.
- Learn the technologies powering self-driving cars, virtual assistants, and robotics.
- Build a portfolio that makes you stand out globally.

Choose AI & ML and become a creator of tomorrow's solutions, an innovator in your domain, and a leader in the digital transformation era.





# CURRICULUM

1

Semester

## Programming & Mathematical Foundations

- Core Subjects: Problem Solving with C, Discrete Mathematics, Statistics, Computer Organization
- Skill Development: English & Foreign Language Communication
- Elective Options: UI/UX Design, Blockchain Fundamentals, Biotechnology
- Activities: NCC/NSS/Sports/MOOCs
- Focus: Logical thinking, statistical basics, and programming fundamentals.

Total Credits: 22

2

Semester

## Advanced Programming & Probability

- Core Subjects: Advanced C, Calculus, Probability Models, Indian Science & Technology
- Skill Development: English Communication II, Foreign Language II
- Electives: Animation & VFX, Blockchain Platforms, Computational Biology
- Activities: NCC/NSS/Sports/MOOCs
- Focus: Problem-solving, foundational data skills, and scientific reasoning.

Total Credits: 22



# 3

Semester

## Core AI Concepts & Data Structures

- Core Subjects: Introduction to AI, Data Structures & Algorithms, Graph Theory
- Tools: Database Management System, Inferential Statistics I
- Communication: Business & Technical English
- Electives: 3D Animation, Bioinformatics, Blockchain Development
- Activities: NCC/NSS/Sports/MOOCs
- Focus: AI foundations, computational logic, and statistical analysis.

Total Credits: 22

# 4

Semester

## Applied Programming & NLP

- Core Subjects: Python Programming, Natural Language Processing, Linear Algebra
- Projects: AI Mini-Project
- Tech Tools: Computer Networks, Inferential Statistics II
- Electives: Blockchain Security, Next-Gen Sequencing, Foundation of Arts
- Activities: NCC/NSS/Sports/MOOCs
- Focus: AI language processing, programming application, and connectivity concepts

Total Credits: 22



# 5

Semester

## AI Tools & Visualization

- Core Subjects: Neural Networks, Embedded Systems, R Programming
- Tech Skills: Data Visualization with Python, Core Java, Front-End Technologies
- Electives: IoT, Marketing Analytics, Computer Vision
- Activities: NCC/NSS/Sports/MOOCs
- Focus: Neural models, data storytelling, system programming.

Total Credits: 22

# 6

Semester

## Deep Learning & Robotics

- Core Subjects: Deep Learning, Fuzzy Logic, Robotics, Advanced Java
- Tools: MongoDB, Data Science Introduction
- Electives: Health Analytics, Association Rule Mining, Business Analytics
- Activities: NCC/NSS/Sports/MOOCs
- Focus: Intelligent systems, automation, and enterprise applications.

Total Credits: 22



# 7

Semester

## Data-Centric Technologies

- Core Subjects: Data Analytics, Data Mining, Time Series Analysis, Spring Framework
- Development Skills: MERN Stack
- Research: Research Methodology
- Electives: Disease Classification, Predictive Analytics, Social Media Analytics
- Activities: NCC/NSS/Sports/MOOCs
- Focus: Full-stack AI, data interpretation, and AI-based decision making.

Total Credits: 22

# 8

Semester

## Cutting-Edge Tech & Capstone

- Core Subjects: Big Data Analytics, Digital Image Processing, Quantum Computing, Augmented Reality
- Tech Stack: Hibernate, Advanced Web Frameworks
- Electives: Supply Chain Analytics, Pattern Recognition, HR Analytics
- Activities: NCC/NSS/Sports/MOOCs
- Focus: Industry-ready tools, future technologies, and project integration.

Total Credits: 22



# COURSE HIGHLIGHTS

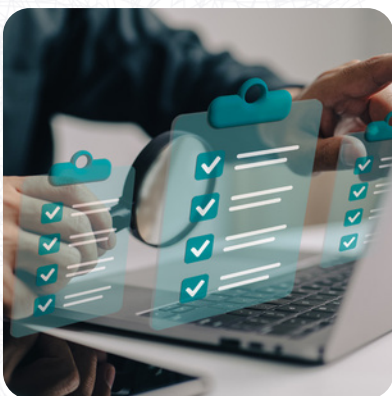


## Daily Doubt Session

If you encounter any error in your learning journey we are here help to help join our daily doubt session and get your doubt cleared from our expert faculties.

## Industry Relevant Projects

Immerse in our curriculum bridging theory and practice through industry-led projects. Gain invaluable hands-on experience guided by seasoned experts, ensuring real-world relevance for your skill set in the market.



## Practical Solutions for each Assignment

For each assignment, you'll receive detailed solutions to help you evaluate your approach and understanding. These solutions provide insights into effective problem-solving techniques, ensuring you're well-prepared for real-world applications.

## Practice Exercises

Experience our immersive practice exercises, enabling you to deepen your understanding and master concepts effortlessly. Unveil your potential with engaging activities designed to enhance your comprehension in just moments!



## Profile Building session

Unlock your industry potential! Elevate beyond skills—showcase your expertise! Join exclusive sessions focusing on crafting a standout LinkedIn profile & portfolio. Learn to captivate recruiters and amplify connections. Transform your abilities into opportunities effortlessly. Let's shape your professional journey together!

## Dedicated Interview Preparation

You'll gain access to a dedicated interview preparation course, focused on sharpening your skills for technical and behavioral interviews. This course covers essential strategies, mock interviews, and tips to help you approach interviews with confidence and expertise.



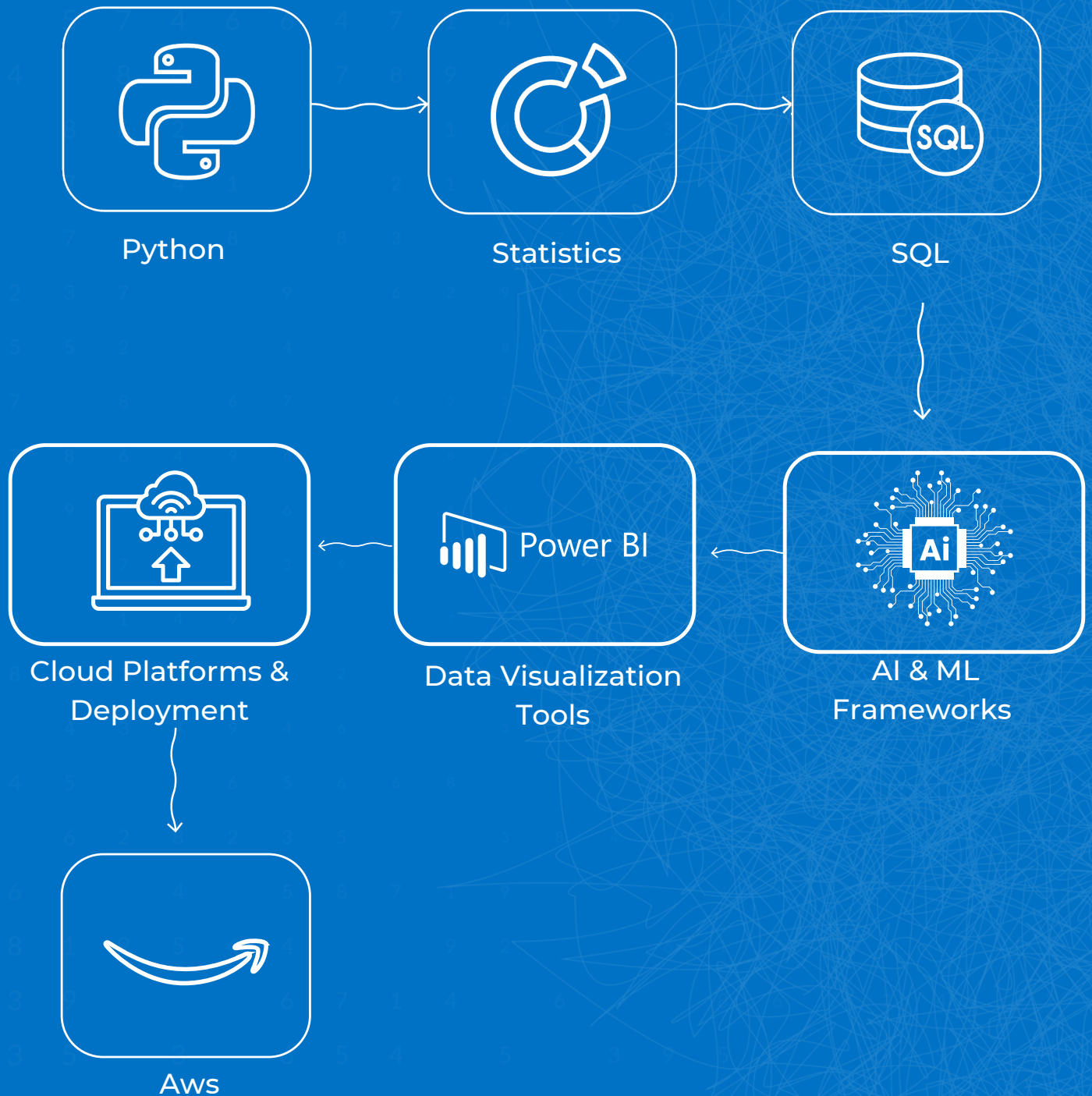


# TOOLS COVERED



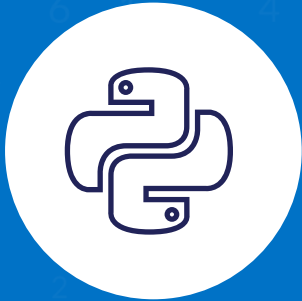
mongoDB

# LEARNING PATH





# PROJECTS



## Python Project

*Working on census data of US to analyse, factor influencing the living standard of people living USA.*



## ML Project

*Helping banks to identify potential clients to whom they can sell their products and services.*



## SQL

*Working Airport data to analyse flights data and identify factor which can optimise operations.*



## Power BI

*Working on superstore dataset to analyse and create insightful dashboard which can help business grow.*



## AWS

*Working on airlines data to get data from storage by creating ETL and analysing all in AWS.*

# PROGRAM HIGHLIGHTS



Project Based Learning



Industry Relevant Projects



60-70% Average Salary Hike



Dedicated Placement Assistance



Expert Faculties



Comprehensive Curriculum



# INDUSTRY-ACADEMIA PARTNERS



# ADMISSION DETAILS



## ELIGIBILITY

12<sup>th</sup> Pass ( Science, Arts or Commerce); or Any Diploma



## DURATION

4 Years Degree (Eight Semesters)



## INTAKE

60



## CERTIFICATION

TILAK MAHARASHTRA VIDYAPEETH PUNE



## TUITION FEE

₹. 1,55,000/- per Annum (Yearly)

# BANKING LOAN PARTNERS



बैंक ऑफ महाराष्ट्र  
Bank of Maharashtra  
भारत सरकार का उद्यम



Janata Sahakari Bank Ltd., Pune  
Multistate Scheduled Bank



COSMOS CO-OP. BANK LTD.  
(Multistate Scheduled Bank)  
Enriching Life





**TILAK  
MAHARASHTRA  
VIDYAPEETH  
PUNE**

(Establishment 1921)

**THANK  
YOU.**

**CONTACT US &  
ENROLL NOW**

SCAN HERE FOR REGISTRATION



2<sup>nd</sup> Floor,  
Department of Computer Science,  
Kesari Wada, Narayan Peth,  
Pune - 411030 (M.S.) India



**+91 922 300 2070 / 71**



[bsc.admission@tmv.edu.in](mailto:bsc.admission@tmv.edu.in)

