

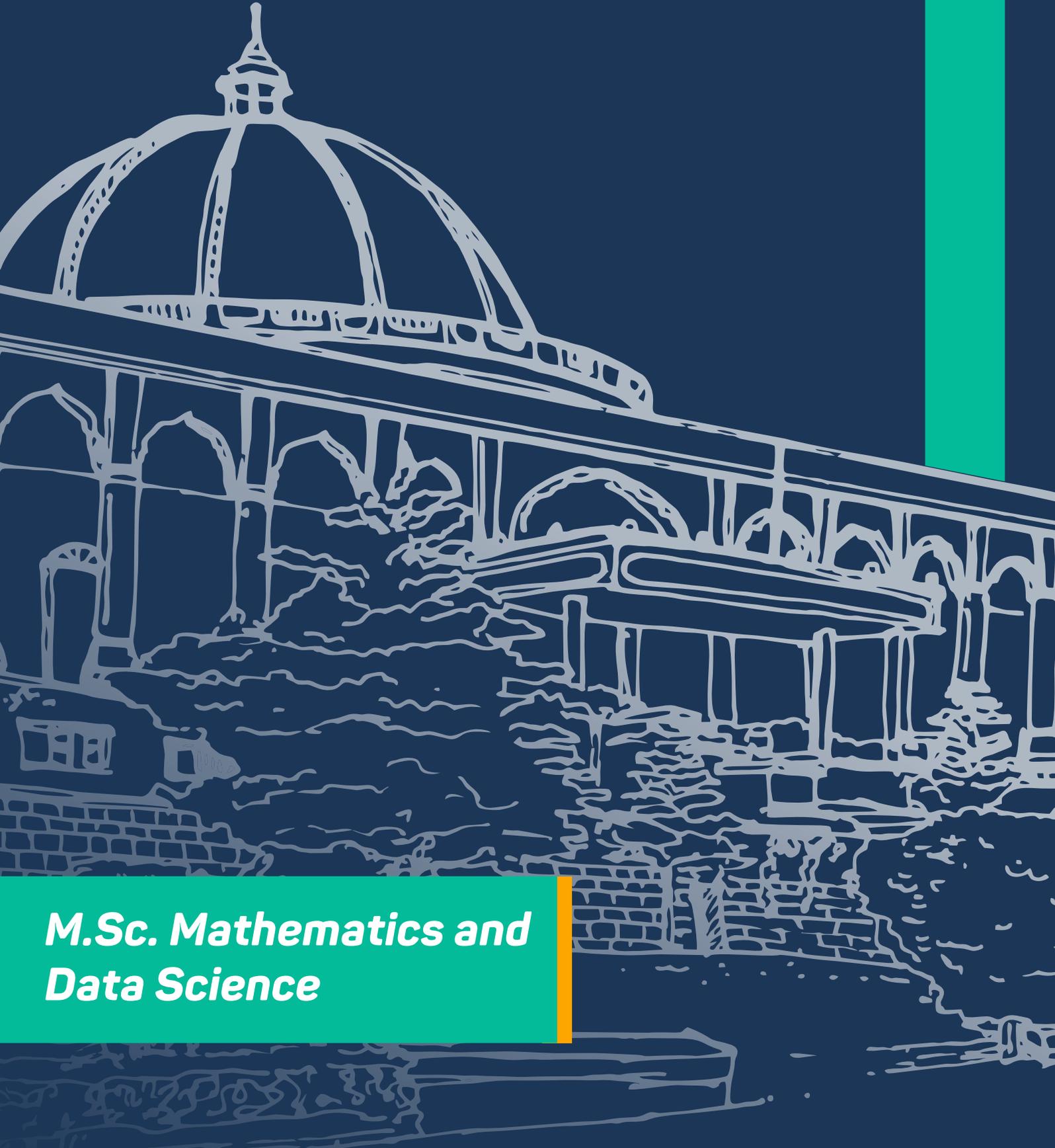


Since 1983

Dr. Vishwanath Karad

**MIT WORLD PEACE
UNIVERSITY** | PUNE

TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS



M.Sc. Mathematics and Data Science

Programme Structure

 mitwpu.edu.in

Division	Faculty of Science & Health Science
School Name	School of Science & Environmental Studies
Department Name	Department Of Mathematics And Statistics
Programme Name	M.Sc. Mathematics and Data Science

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| Course Type | Description |
|----------------------|--|
| Programme Core | Courses dealing with foundations, depth and breadth of the major in which a student is admitted at MIT-WPU |
| Programme Electives | Open electives under the Programme allow students to specialise in a particular area connected to their major. |
| University Core | Courses that reflect the core MITWPU values and the mission of Life Transformation of students. |
| University Electives | Multidisciplinary courses across the faculties at MIT-WPU and outside the Programme core. |

**M.Sc. (Mathematics & Data Science) First Year, (2025-27)
Semester – I**

| Sr. No | Name of the Course | Type | Credits |
|--------|--|------|-----------|
| 1 | Linear Algebra | PF | 2 |
| 2 | Real Analysis | PF | 3 |
| 3 | Probability Theory | PM | 3 |
| 4 | Python | PM | 1 |
| 5 | Research Methodology | PM | 4 |
| 6 | Program Elective-01 | PE | 4 |
| 7 | Data Science Lab – 01 | PM | 2 |
| 8 | Scientific Studies of Mind, Matter, Spirit and Consciousness | UC | 2 |
| 9 | Yoga | UC | 1 |
| | Total: | | 22 |

| | Track 1 | Track 2 | Track 3 |
|--------------------|-----------------------------------|--------------------------------------|-------------------------------|
| Elective Basket | Algebra & Optimisation Techniques | Statistical Analysis | A.I. & Data Visualisation |
| Name of the course | Group Theory
MDS40060 | Computational Statistics
MDS40070 | Numerical Methods
MDS40080 |

**M.Sc. (Mathematics & Data Science) First Year, (2025-27)
Semester – II**

| Sr. No | Name of the Course | Type | Credits |
|--------|--------------------------------------|------|-----------|
| 1 | Differential Equations | PF | 3 |
| 2 | Measure Theory | PM | 3 |
| 3 | Introduction to Data Science | PM | 3 |
| 4 | Statistical Inference | PM | 2 |
| 5 | Data Based Management Systems (DBMS) | PM | 1 |
| 6 | Program Elective-02 | PE | 4 |
| 7 | Data Science Lab – 02 | | 4 |
| 8 | Peace Building: Global Initiatives | UC | 2 |
| | Total: | | 22 |

| | Track 1 | Track 2 | Track 3 |
|--------------------|--|-----------------------------------|---|
| Elective Basket | Algebra & Optimisation Techniques | Statistical Analysis | A.I. & Data Visualisation |
| Name of the course | Ring Theory & Field Theory
MDS40150 | Stochastics Processes
MDS40160 | Data Visualization & explanatory analysis
MDS40170 |

**M.Sc. (Mathematics & Data Science) Second Year, (2025-27)
Semester – III**

| Sr. No | Name of the Course | Type | Credits |
|--------|----------------------|------|-----------|
| 1 | Advanced Calculus | PM | 3 |
| 2 | Functional Analysis | PM | 4 |
| 3 | Data Mining | PM | 3 |
| 4 | Machine Learning | PM | 3 |
| 5 | Program Elective-03 | PE | 4 |
| 7 | Machine Learning Lab | PM | 2 |
| 8 | Mini Project | PR | 2 |
| | Total: | | 21 |

| | Track 1 | Track 2 | Track 3 |
|--------------------|-----------------------------------|-----------------------------------|----------------------------|
| Elective Basket | Algebra & Optimisation Techniques | Statistical Analysis | A.I. & Data Visualisation |
| Name of the course | Operations Research
MDS50050 | Multivariate Analysis
MDS50060 | Soft Computing
MDS50070 |

**M.Sc. (Mathematics & Data Science) Second Year, (2025-27)
Semester – IV**

| S.No. | Name of the Course | Type | Credits |
|-------|---------------------------------|------|---------|
| 1 | Financial Mathematics | PM | 4 |
| 2 | Program Elective-04 | PE | 4 |
| 3 | Project / Industrial Internship | PR | 12 |
| | Total: | | 20 |

| | Track 2 | Track 2 | Track 2 |
|--------------------|-----------------------------------|----------------------------------|-------------------------------------|
| Elective Basket | Algebra & Optimisation Techniques | Statistical Analysis | A.I. & Data Visualisation |
| Name of the course | Actuarial Mathematics
MDS50110 | Time Series Analysis
MDS50120 | Artificial Intelligence
MDS50130 |

Program Elective Tracks

| Semester | Name of the Course | Type |
|----------|---|-----------------------|
| I | Group Theory | Program Elective - 01 |
| I | Computational Statistics | Program Elective - 01 |
| I | Numerical Methods | Program Elective - 01 |
| II | Ring Theory & Field Theory | Program Elective - 02 |
| II | Stochastics Processes | Program Elective - 02 |
| II | Data Visualization & explanatory analysis | Program Elective - 02 |
| III | Operations Research | Program Elective - 03 |
| III | Multivariate Analysis | Program Elective - 03 |
| III | Soft Computing | Program Elective - 03 |
| IV | Actuarial Mathematics | Program Elective - 04 |
| IV | Time Series | Program Elective - 04 |
| IV | Artificial Intelligence | Program Elective - 04 |

*Modifications to the programmes and courses are contingent upon adherence to university guidelines and procedures. Any proposed changes must undergo a thorough review process, including consultation with relevant academic departments, approval from the appropriate administrative bodies, and compliance with accreditation standards.

Additionally, consideration will be given to feedback from students, faculty, and other stakeholders to ensure that modifications align with the overall educational objectives and mission of the university. The implementation of any approved changes will be communicated transparently to the university community, and appropriate measures will be taken to facilitate a smooth transition for all affected parties.