

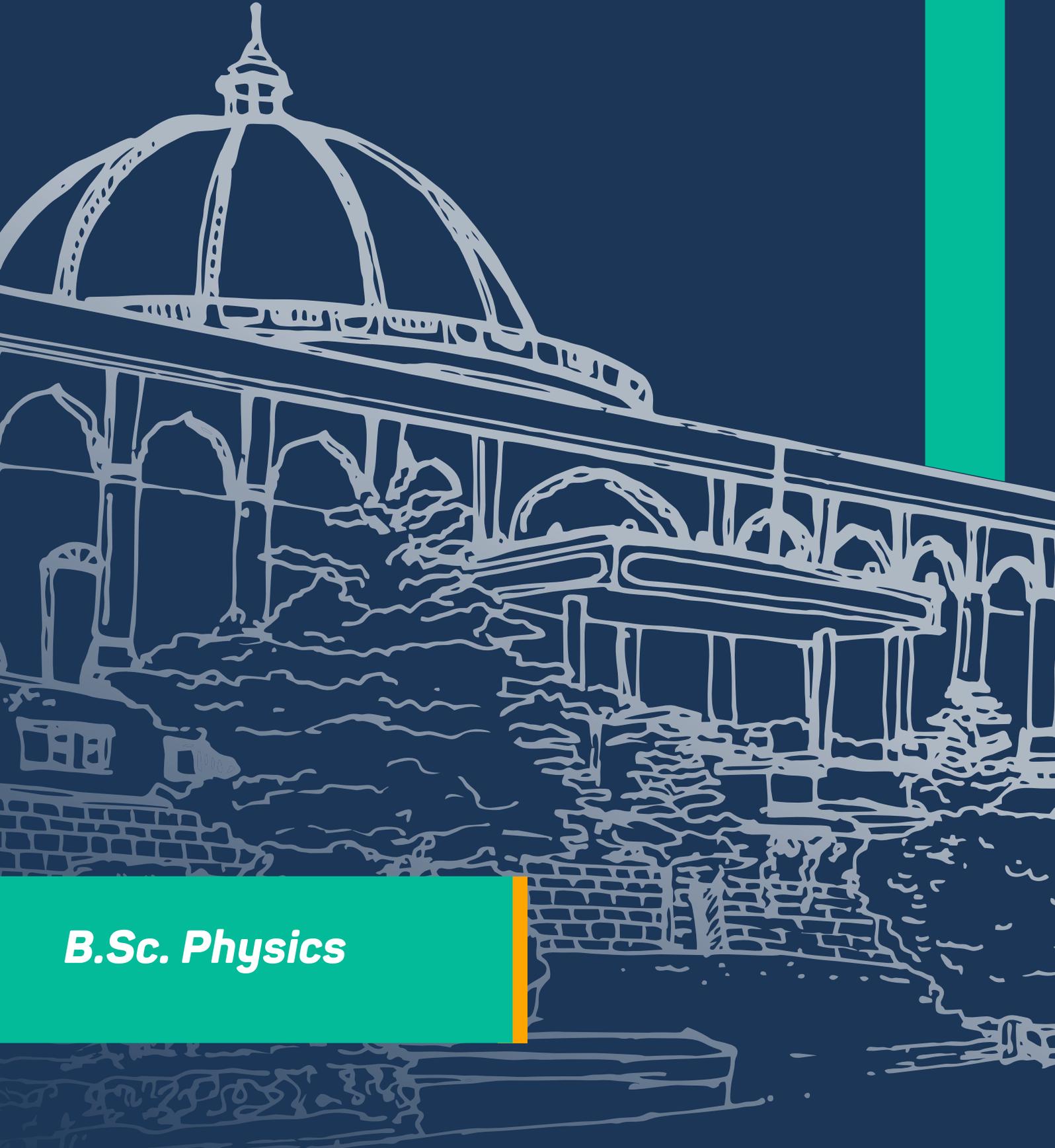


Since 1983

Dr. Vishwanath Karad

**MIT WORLD PEACE
UNIVERSITY** | PUNE

TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS



B.Sc. Physics

Programme Structure

 mitwpu.edu.in

Division	Faculty of Science & Health Science
School Name	School of Science & Environmental Studies
Department Name	Department of Physics
Programme Name	B.Sc. Physics

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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.

Semester	Odd(I)	Even(II)	Total Credits
First Year	21	22	43
Second Year	22	22	44
Third Year	22	22	44
Fourth Year	18	16	34

Semester - I

Semester	Course Type	Course Name / Course Title	Total Credits
I	UC	Indian Constitution	1
I	UC	Environment and Sustainability	1
I	UC	Yoga - I	1
I	UC	Social Leadership Development Program	1
I	UC	Financial Literacy	1
I	PF	Chemistry	2
I	PF	Fundamentals of Programming I	2
I	PF	Mathematics	3
I	PF	Mechanics and Properties of Matter	3
I	PF	Physics Laboratory I	1
I	PF	Programming Laboratory I	1
I	PF	Electricity and Magnetism	2
I	PF	Heat and Thermodynamics	2
		Total Credits:	21

Semester - II

Semester	Course Type	Course Name / Course Title	Total Credits
II	UC	Yoga - II	1
II	UC	Co-creation	1
II	UC	AI for everyone	2
II	UC	Foundation of Peace	2
II	UC	Indian Knowledge System (General)	2
II	UC	Sports	1
II	PM	Classical Mechanics with Fluid Mechanics	4
II	PF	Fundamentals of Programming II	2
II	PM	Mathematical Methods in Physics I	3
II	PF	Physics Laboratory II	1
II	PF	Programming Laboratory II	1
II	PM	Electronics	2
		Total Credits:	22

Semester - III

Semester	Course Type	Course Name / Course Title	Total Credits
III	UC	Spiritual and Cultural heritage: Indian Experience	2
III	UC	Research Innovation Design Entrepreneurship (RIDE)	1
III	UE	University Electives - I	3
III	PF	Biology for Physicists	2
III	PF	Physics Laboratory III	1
III	PM	Mathematical Methods in Physics II	3
III	PM	Quantum Mechanics	4
III	Program Capstone Project/Seminar and Internships	Project Based Learning I	1
III	PM	Nuclear and Particle Physics	3
III	PF	Indian Knowledge System II	2
		Total Credits:	22

Semester - IV

Semester	Course Type	Course Name / Course Title	Total Credits
IV	UC	Rural Immersion	1
IV	UC	Life Transformation Skills	1
IV	UE	University Electives - II	3
IV	PM	Atomic and Molecular Physics	3
IV	PF	Physics Laboratory IV	1
IV	PM	Numerical Methods in Physics I	3
IV	PM	Digital Electronics	3
IV	PM	Electrodynamics	3
IV	PF	Physics of Materials	3
IV	Program Capstone Project/Seminar and Internships	Project Based Learning II	1
		Total Credits:	22

Semester - V

Semester	Course Type	Course Name / Course Title	Total Credits
V	UC	Managing Conflicts Peacefully: Tools and Techniques	2
V	UE	University Electives - III	3
V	PE	Program Elective - I	4
V	PM	Numerical Methods in Physics II	4
V	PM	Quantum Materials	4
V	PM	Mathematical Methods in Physics III	3
V	Program Capstone Project/ Seminar and Internships	Project I	2
		Total Credits:	22

Semester - VI

Semester	Course Type	Course Name / Course Title	Total Credits
VI	UC	National Academic Immersion Program	2
VI	PE	Program Elective - II	4
VI	PM	Artificial Intelligence and Machine Learning for Physicists	4
VI	PM	GPU and Parallel Programming Laboratory	1
VI	PM	Introduction to Quantum Computing	4
VI	PM	Statistical Mechanics	3
VI	PM	Advanced Computational Methods in Physics	4
		Total Credits:	22

Semester - VII

Semester	Course Type	Course Name / Course Title	Total Credits
VII	PE	Program Elective - III	4
VII	Program Capstone Project/ Seminar and Internships	Project II	12
VII	Program Capstone Project/ Seminar and Internships	Research Methodology in Physics	2
		Total Credits:	18

Semester - VIII

Semester	Course Type	Course Name / Course Title	Total Credits
VIII	PE	Program Elective - IV	4
VIII	Program Capstone Project/ Seminar and Internships	Internship	12
		Total Credits:	16

Program Electives

Semester	Course Name / Title	Program Elective
V	Internet of Things	Program Elective - I
V	Basics of Astronomy and Astrophysics	Program Elective - I
V	Laser Physics	Program Elective - I
V	Optics	Program Elective - I
VI	Computer Graphics	Program Elective - II
VI	Observational Astrophysics	Program Elective - II
VI	Photonics	Program Elective - II
VI	Relativistic Mechanics	Program Elective - II
VII	Blockchain technology	Program Elective - III
VII	Radiative Processes, Fluids and Plasmas	Program Elective - III
VII	Laser Manufacturing	Program Elective - III
VII	Advanced Quantum Mechanics	Program Elective - III
VIII	Data Analytics	Program Elective - IV
VIII	Solar and Stellar Physics	Program Elective - IV
VIII	Laser Applications	Program Elective - IV
VIII	Advanced Mathematical Physics	Program Elective - IV

*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.