



NICMAR
UNIVERSITY
PUNE

NICMAR Doctoral School

Ph. D. INFORMATION BROCHURE



NICMAR
UNIVERSITY
PUNE

NICMAR UNIVERSITY, PUNE

Ph.D. ADMISSIONS
July - 2024 Batch

- 1. About NICMAR University, Pune**
- 2. Ph.D. Admissions**
- 3. Scholars Category**
- 4. Minimum Eligibility Qualifications**
- 5. Admission Process**
- 6. Fee Structure**
- 7. Fellowship**
- 8. Important Dates**
- 9. Application Process**
- 10. NICMAR Ph.D. Admission Test (NPAT)**
- 11. Syllabus for the NPAT**
- 12. Interview**
- 13. Registration**
- 14. Program Duration**

1. About NICMAR University, Pune

National Institute of Construction Management and Research (NICMAR) was established by the Indian Construction Industry in 1983 as a leading educational Institute with the major objective of enhancing the employability and career aspirations of the ambitious student community who would like to serve the Indian construction Industry. NICMAR for the past three decades has been a knowledge leader for the Construction, Real Estate, Infrastructure, and Projects (CRIP) sector and continues to be the harbinger of educational changes for this sector. NICMAR received university status as NICMAR University Pune Act (L. C. Bill No. Of 2022) was passed by Maharashtra State Government on 16th March 2022 and appeared in “Maharashtra Government Gazette” on 12th May 2022 (Mah. Act No. XXXVI of 2022).

NICMAR University, Pune places a strong emphasis on research and industrial consultancy. Faculty members of the university have published and presented many research papers in national/international journals and conferences of repute and have been invited to deliver expert talks on various platforms. The university’s faculty members have undertaken numerous sponsored research studies for various organizations including the Government of Maharashtra, organizations in the public and private sectors, and professional associations.



2. Ph.D. Admissions (July 2024 Batch)

Applications are invited for First Semester admission to the Ph.D. program (Full time and/or Part-time) starting January 2024 in NICMAR University, Pune in the following areas of research:

1. School of Construction (SoC)

Construction Management, Health & Safety in Construction, Fire Safety, Sustainable Construction, Lean Construction, Digitalization in Construction, Contracts Management, and allied fields.

2. NICMAR Business School (NBS)

Finance, Marketing, Human Resource Management, Operations and Supply Chain Management, Business Analytics, Applied Economics, and allied fields.

3. School of Project Management (SoPM)

Project Management, Project Risk Management, Project Quality Management, Industry 4.0 preparedness, Project Communication and Stakeholder Management and allied fields.

4. School of Architecture, Planning, and Real Estate (SoAPRE)

Infrastructure Development, Urban Transport, Urban Planning & Development, Real Estate & Infrastructure Finance, and allied fields.

5. School of Energy and Environment (SoEE)

Sustainable Development, Environment Management, Energy Management, Building Design for Energy Performance, and allied fields

Information on the specific field and related research activities are available on the university website. Candidates are requested to visit the university website and explore the relevant research activity of faculty members of NICMAR University, Pune.

3. Scholars Category

• Full-Time Scholars:

These scholars are required to report physically to the institute on daily basis except on pre-approved leaves sanctioned by the competent authority.

• Part-Time Scholars:

Preferably individuals working in organizations providing basic facilities and environment for research.

* Reservation as per NUP policy.

4. Minimum Eligibility Qualifications

4-year bachelor's degree in relevant disciplines with minimum 75% Marks or equivalent	OR	Master's Degree in relevant disciplines with OR minimum 55% marks or equivalent.	OR	M. Phil. Degree in relevant discipline with minimum 55% marks or equivalent.
---	----	--	----	--

5. Admission Process

NICMAR Ph.D. Admission Test (NPAT)+ Interview

Exemptions from NPAT:

(CSIR/UGC - NET/JRF, GATE, SLET/SET or Equivalent Qualified Candidates are Exempted)

***However, those who are willing to receive NICMAR Doctoral Fellowship (NDF) must appear in the NICMAR Ph.D. Admission test.**

The weightage of the entrance test and interview shall be 70% and 30% respectively. Only those students securing at least 50% marks in the written examination and 50% in the interview separately shall be eligible for admission. For NDF, appropriate cut-off will be decided by the competent authority.

Merely securing the minimum marks criteria does not guarantee admission. Some other criteria such as the research aptitude of the candidate, availability of a supervisor in the relevant field, etc. will also be considered for the final admission offer.

6. Fee Structure

1. Doctor of Philosophy (PhD) Full Time

A. Indian Nationals

The details of the total amount of fees payable with the payment schedule for this programme are given below:

1. At the time of admission

a.	Semester Tuition Fee	: Rs. 50,000/-
b.	Security Deposit	: Rs. 10,000/-
Total		: Rs. 60,000/-

2. Within 7 days of the commencement of subsequent Semesters* : **Rs. 50,000/-**

***For the remaining duration of the course.**

NICMAR University, Pune provides generous tuition fee waiver to attract talented research scholars to its Doctoral programs, and hence, the following tuition fee schemes have been offered to full-time Ph.D. scholars with below-given fellowships.

Full-time scholars with University Grant Commission (UGC) Fellowship or other Govt. Fellowships like UGC/CSIR JRF etc. or with NICMAR Doctoral Fellowship (NDF)

1. At the time of admission

a.	Semester Tuition Fee	: Rs. 25,000/-
b.	Security Deposit	: Rs. 10,000/-
Total		: Rs. 35,000/-

2. Within 7 days of the commencement of subsequent Semesters* : Rs. 25,000/-

***For the remaining duration of the course.**

B. Foreign Nationals

The details of the total amount of fees payable with the payment schedule for this programme are given below:

1. At the time of admission

a.	Semester Tuition Fee	: USD 2,000
b.	Security Deposit	: USD 500
Total		: USD 2,500

2. Within 7 days of the commencement of subsequent Semesters* : USD 2,000

***For the remaining duration of the course.**

2. Doctor of Philosophy (Ph.D.) Part Time

The details of the total amount of fees payable with the payment schedule for this programme are given below:

1. At the time of admission

a.	Semester Tuition Fee	: Rs. 50,000/-
b.	Security Deposit	: Rs. 10,000/-
Total		: Rs. 60,000/-

2. Within 7 days of the commencement of subsequent Semesters* : Rs. 50,000/-

***For the remaining duration of the course.**

Note: Hostel and mess charges changes are additional.

The tuition fee includes classroom teaching, prescribed doctoral workshops as per the program structure, and other charges i.e., fees for examinations, evaluation, project work (as applicable) and assessments, library, and students' welfare fund.

The admission fee is non-refundable and non-transferable under any circumstances. The security deposit is refundable on completion of the program (after adjustment of dues, if any from the student).

The following conditions apply to the payment of fees and other dues.

For 1st Instalment (at the time of admission):

- The fees and other dues payable at the time of admission are as mentioned in the admission offer letter.

For 2nd Instalment Onwards:

- Fees are payable as per the notification given to the students by the concerned School.
- The fees are payable as per the schedule given, failing which, fees paid after this schedule will be subject to a late fine of Rs. 100/- per day for First one Month, Rs. 200/- per day for Second Month, Rs. 300/- per day for Third Month. However, after Third Month, the University may cancel the registration of the student in his/her programme if no valid ground is established for the delay.

The NICMAR University, Pune reserves the right to revise any/all the components of the above policy, including the payment schedule and refund policy without any prior notice.

7. Fellowship

To attract quality research scholars to the Ph.D. program, NICMAR University, Pune is offering NICMAR Doctoral Fellowship (NDF) to some full-time research scholars of the university. Under this scheme, scholars will be paid a monthly fellowship of Rs. 1,00,000 in year 1, 2, and 3. Along with monthly fellowship, NDF provides a contingency grant of Rs. 50,000 in each fellowship year. This contingency grant is to meet expenses such as conference paper presentations, stationery purchases, relevant books, software, equipment, etc. and is re-imbursed on actual subject to the limit of Rs. 50,000/-.

The award of the NDF fellowship will be as per university norms and may change from time to time. It will be mandatory for each full-time scholars to undertake 4-6 hours of work per week as assigned by the university.

8. Important Dates

ACTIVITY	DATES
Application Starts	February 20 th 2024
Application Deadline	April 10 th 2024
Admission Test	April 17 th 2024
Interview Dates	April 29 th , 30 th and May 2 nd 2024
Result Notification	May 6 th 2024
Deadline for Fee Payment	May 25 th 2024
Student Reporting	July 17 th 2024
Registration & Orientation	July 17 th 2024

The Institute reserves the right to change the above dates. Candidates will be informed in advance should there be such a change.

9. Application Process

- The Admission portal to apply online opens on **February 20, 2024**.
- Interested and eligible candidates should apply through the prescribed application form available online at <https://www.nicmar.ac.in>. Hard copy of the application form is not required to be sent. Candidates are advised to take a printout of the filled form and retain it for further reference.
- Candidates will need to register online before filling out the application form. A registered mobile number and email ID will be required to generate a username and password essential for filling out the application form.
- While filling out the application form online, candidates are required to select the area of research for which they wish to apply for. For this, a candidate may select one school out of the five available school choices. An entrance examination will be conducted for the subject area relevant to the school. Candidates are advised to select the most relevant school based on their qualifying degree and research area of interest. One can also refer to the detailed syllabus for the entrance test of each school available on the website.
- The completed application form along with the prescribed application fee should be submitted online by the prescribed deadline. Detail on modes of Fee Payment will be available while applying online. Selected school cannot be changed once the application form is submitted.

- f. The deadline for submission of the completed application form online is **April 10th 2024**.
- g. This option will be available only till the deadline for submission of the form which is **April 10th 2024**.
- h. A candidate can submit only one application form for Ph.D. admission. However, if a candidate discovers any mistake in the form to be submitted by him, there will be an edit option that will be made available before the final submission of the application form, which he/she can make use of to incorporate necessary changes. This option will be available only till the deadline for submission of the form.

10. NICMAR Ph.D. Admission Test (NPAT) [HYBRID MODE]

The NICMAR Ph.D. admission Test is computer-based test and will consist of two papers: Paper-I and Paper II. Paper-I contains the syllabus of Research Aptitude consisting of 60 multiple-choice questions of one mark each. There is no negative marking. It consists of questions on reading comprehension, logical & mathematical reasoning, analytical reasoning, and Data Interpretation. Paper-I is for 60 minutes.

Paper II is based on the area of specialization. The syllabus for each area of specialization is given below. Candidates are advised to select the most relevant school based on their qualifying degree and research area of interest. Paper-II syllabus can be one of the references for this. Paper II consists of 60 multiple-choice questions of one mark each. There is no negative marking. Paper II is also for 60 minutes.

System requirements for online NPAT will be shared in the Admit Card.

11. Syllabus for the NPAT

The NICMAR Ph.D. admission Test will consist of two papers: Paper-I and Paper II. Paper-I contains the syllabus of Research Aptitude consisting of 60 multiple-choice questions of one mark each. There is no negative marking. It consists of questions on reading comprehension, logical & mathematical reasoning, analytical reasoning, and Data Interpretation. Paper-I is for 60 minutes.

Paper II is based on the area of specialization. The syllabus for each area of specialization is given below. Candidates are advised to select the most relevant school based on their qualifying degree and research area of interest. Paper-II syllabus can be one of the references for this. Paper II consists of 60 multiple-choice questions of one mark each. There is no negative marking. Paper II is also for 60 minutes.

The syllabus of NPAT for each school is as below:

School of Construction (SoC)

Construction Materials: Structural Steel – Composition, material properties and behaviour; Concrete - Constituents, mix design, short-term and long-term properties.

Construction Management: Types of construction projects; Project planning and network analysis - PERT and CPM; Cost estimation.

Transportation Infrastructure: Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments. Geometric design of railway Track – Speed and Cant. Concept of airport runway length, calculations and corrections; taxiway and exit taxiway design.

Highway Pavements: Highway materials - desirable properties and tests; Desirable properties of bituminous paving mixes; Design factors for flexible and rigid pavements; Design of flexible and rigid pavement using IRC codes.

Geomatics: Principles of surveying; Errors and their adjustment; Maps - scale, coordinate system; Distance and angle measurement. Photogrammetry and Remote Sensing - Scale, flying height; Basics of remote sensing and GIS.

Air Pollution: Types of pollutants, their sources and impacts, air pollution control, air quality standards, Air quality Index and limits.

Engineering Mechanics: System of forces, free-body diagrams, equilibrium equations; Internal forces in structures; Frictions and its applications; Centre of mass

Solid Mechanics: Bending moment and shear force in statically determinate beams; Simple stress and strain relationships; Simple bending theory, flexural and shear stresses, shear centre; Uniform torsion, Transformation of stress; buckling of column, combined and direct bending stresses.

Structural Analysis: Statically determinate and indeterminate structures by force/ energy methods; Method of superposition; Analysis of trusses, arches, beams, cables and frames; Displacement methods: Slope deflection and moment distribution methods.

Structures: Working stress and Limit state design concepts for concrete and steel structures.

Fluid Mechanics: Properties of fluids, fluid statics; Continuity, momentum and energy equations and their applications; Potential flow, Laminar and turbulent flow; Flow in pipes, pipe networks; Concept of boundary layer and its growth; Concept of lift and drag.

Soil Mechanics: Three-phase system and phase relationships, index properties; soil classification systems; Permeability, Seepage, flow nets, uplift pressure, piping, capillarity, seepage force; Principle of effective stress and quicksand condition; Compaction of soils.

Foundation Engineering: Sub-surface investigations, sampling, plate load test, standard penetration and cone penetration tests; Earth pressure theories; Stability of slopes; Stress distribution in soils; Pressure bulbs, Shallow foundations, effect of water table.

NICMAR Business School (NBS)

Management Functions, Communication, Decision Making, Organization Structure and Design.

Managerial Economics, Demand analysis, Market Structures, National Income, Inflation.

Business Ethics & CSR, Ethical Issues & Dilemma, Corporate Governance, Value-Based Organisation. Management Theories.

Human Resource Management, Strategic Role of Human Resource Management, Competency Mapping & Balanced Scoreboard, Career Planning and Development, Performance Management and Appraisal, Organization Development, Change & OD Interventions, Talent Management & Skill Development, Employee Engagement & Work-Life Balance, Organisational Behaviour.

Entrepreneurship Development. Women Entrepreneurship and Rural Entrepreneurship.

Strategic Management, Strategic Analysis, Strategy Formulation, Strategy Implementation. Marketing, Market Segmentation, Positioning, and Targeting; Product and Pricing Decision, Place and promotion decision. Micro and macro Economics.

Marketing Management; Consumer and Industrial Buying Behaviour, Brand Management, Logistics and Supply Chain Management, Drivers, Value creation, Supply Chain Design, Designing and Managing Salesforce, Personal Selling, Service Marketing, Customer Relationship Marketing, Retail Marketing, Emerging Trends in Marketing, International Marketing.

International Business, Foreign Direct Investment, Multilateral regulation of Trade and Investment under WTO, International Trade Procedures and Documentation; EXIM Policies, Role of International Financial Institutions, Information Technology, Artificial Intelligence and Big Data, Data Warehousing, Data Mining, and Knowledge Management. Capacity Management in Operations, Manufacturing Process Design and Analysis, Inventory management, Aggregate Operations Planning and Scheduling, Works and motion Study. Supply Chain Management, Sourcing Strategic Services.

Financial Statements, Capital Structure, Leverages, Value & Returns, Capital Budgeting, Risk and Uncertainly Analysis Dividend, Mergers and Acquisition, Portfolio Management, Derivatives, Working Capital Management, International Financial Management, Foreign exchange market.

Statistics for Management, Data analytics, Probability modelling, inferential statistics, multivariate data analysis, time series analysis, optimisation, econometric modelling. Quality Management.

Information Technology, AI & ML, Data Analytics, Computer Programming, R & Python, Hardware & Software.

School of Project Management (SoPM)

Statistics and quantitative methods: Central limit theorem, mean mode, median, sampling and population survey, correlation, regression, hypothesis testing, random sampling, ANOVA, design of experiment, deterministic models- linear programming, transportation models, Multi-criterion decision making using AHP, probabilistic models- queuing theory, decision theory and simulation models

Project planning and control: Project management processes, systems approach to project management project life cycle, preparing work breakdown structure (WBS), Matrix organization structure for projects, Roles and responsibilities of project manager, professional practice and ethics, Students syndrome in project management, project planning and scheduling using Critical path method (CPM), concept of total float and free float, Project planning and scheduling using Program Evaluation and Review Technique (PERT), project scheduling using line of balance method, Critical Chain Project Management; feeding buffer, project buffer.

Core knowledge areas of project management: Project time management: project schedule monitoring and control; project cost management: cost estimation methods, project budgeting, cost control using Earned value management, depreciation, activity-based costing, project scope management: work break down structure, project quality management: Project quality control, quality assurance and audits.

Facilitating knowledge areas of project management: Project procurement management : process of tendering, bidding and contracting in projects, Project integration management: preparing project charter, team building in projects, conflict and dispute resolution, Project risk management : Assessing political, economic, social, technological and environmental risks in projects, Human resources management in projects : Managing men, machine, money and materials in projects; Project stakeholder management :internal and external stakeholders, financial appraisal of project with NPV& IRR, stakeholder engagement strategies.

School of Architecture, Planning and Real Estate (SoAPRE)

Regional and Settlement Planning, Codes and standards, Construction and Project Management techniques, disaster resistant structures, environmental planning and design, Sustainable development, Urban Design principles, Planning processes new city planning concepts, Methods of non-spatial and spatial data analysis, Housing, Real estate valuation, Building Management Systems, Built environments, Transportation planning, Urban and Rural Infrastructure development, Application of G.I.S and Remote Sensing techniques in planning.

Construction Materials and Management, Water Resources Engineering, Environmental Engineering, Water and Waste Water Quality and Treatment, Municipal Solid Wastes, Transportation Engineering, Transportation Infrastructure, Traffic Engineering.

Micro Economics, Consumer Behaviour, Macro Economics, Demand and Supply dynamics, IMF & World Bank, Public Economics, Public Revenue, Public debt, Public budget, Fiscal Policy and its implications, Real Estate and Banking, Instruments and Working of Monetary Policy, Growth and Development Economics, Models of Economic Growth, Social Sector Development, Environmental Economics and Demography, Cost-Benefit Analysis, Rural and Urban Development Economics, Reforms in Land, Labour and Capital Markets, Centre-State Financial Relations.

Linkages between real estate/ infrastructure growth and policy rates, inflation- real estate asset price, sources of finance for real estate and infrastructure development, innovative financial instruments in real estate and infrastructure, FDI in real estate and infrastructure, Relationship between Economic growth, real estate and infrastructure development, project selection criteria and funding options, Risk and Returns, Concept of Portfolio, Real Estate and infrastructure regulatory bodies and financial institutions.

School of Energy and Environment (SoEE)

Project Management: Types of construction projects; Project planning, scheduling, Monitoring and Control. Network Techniques - PERT and CPM; Cost estimation.

Civil / Construction materials / Green Construction Materials: Stones, brick, Lime & lime products, sand, cement & timer etc.-Manufacturing, properties and specifications, preparation and use of cement and lime mortars, plane and reinforced concrete. Building materials - Foundation, floors, walls and panels, roofing, wood work. Roof Treatment: Finishing items for floors, walls, panels and woodwork. Plumbing and fixtures, shuttering and staging, ready mixed concrete. General rules and regulations for Building construction. Sustainable building materials (product selection criteria and sustainable materials); Green procurement and subcontracting, Concept of Zero water building, water management and waste management, water conservation strategies in buildings, water footprint, carbon footprint, grey water management, smart water management, nature-based treatment.

Architecture and Planning: Building Construction, History of Architecture, Contemporary Architecture, Building Services, Building Bye-laws, Site Planning and Landscape design, Climate responsive design, Solar passive and active systems, Computer applications, Building Information Modelling, Sustainable development strategies, Green buildings, Green building rating systems. Energy conservation, Energy Efficiency.

Environmental Management / Science: Introduction to environmental Management System- -Implication of development projects on the eco-system- land, water and air; Protection of forests, fauna, fisheries and wild life; Initiatives at the international and national levels for protection of environment and ecology; Pollution -Types -Impact and Mitigation Strategies Role of industry and built environment in sustainable development: Introduction, Definition, Need, Principles, and Key terminologies, Drinking water Standards, Effluent standards, Emission and ambient standards. Benefits and barriers of EMS – Concept of continual improvement and pollution prevention - environmental policy – initial environmental review environmental aspect and impact analysis.

Mechanical/Electrical/Chemical Engineering: Mechanical Engineering systems: Gears, drives, Boiler, Pumps, fans, blower's compressor, turbine, heat pumps, HVAC, drives, steam cycles, Carnot cycle, thermal power plant, hydroelectric power plant. Electrical Engineering systems basics: Transformer, Electric Motors-DC -AC, switch gears, Power factor calculation, Iron losses, Distribution and transmission systems, Metering system. Mass and Energy balance. Thermodynamic properties and VLE. Fluid mechanics. Size reduction and size separation. Heat and Mass transfer. Chemical reaction engineering.

Chemical technology. Instrumentation and process control. Plant design and economics. **Energy Management:** Energy efficiency of different systems; boiler, compressor, pumps. Benchmarking of energy efficiency of these products. In Boiler -efficiency testing, excess air control, Steam distribution & use- steam traps, condensate recovery, flash steam utilization. Thermal Insulation. Electrical Systems: Demand control, power factor correction, star rating of an electrical appliance, Motor drives- motor efficiency testing, energy efficient motors. Energy conservation in Pumps, Fans (flow control), Compressed Air Systems, Refrigeration & air conditioning systems. Waste heat recovery: recuperates, Cogeneration - concept, options (steam/gas turbines/diesel engine based. Demand side management.

12. Interview [HYBRID MODE]

The eligible candidates will be called for the interview process. The focus of this process is to identify candidates' inclination, aptitude, and preparedness toward research. It is expected from each appearing candidate that they bring a short research proposal highlighting the research area of interest, its importance, and its uniqueness in the field. The interview process contains 30% weightage in the final selection score. Only those who have secured a minimum of 50% in the written examination and 50% in the interview separately are eligible for admission. The final admission offer also relies on additional criteria like the candidate's research aptitude, and the availability of a supervisor in their chosen field.

13. Admission

On successful admission process (NPAT + P. I.) provisional offer for admission will be sent to the selected candidates and will be called for document verification in person.

14. Registration

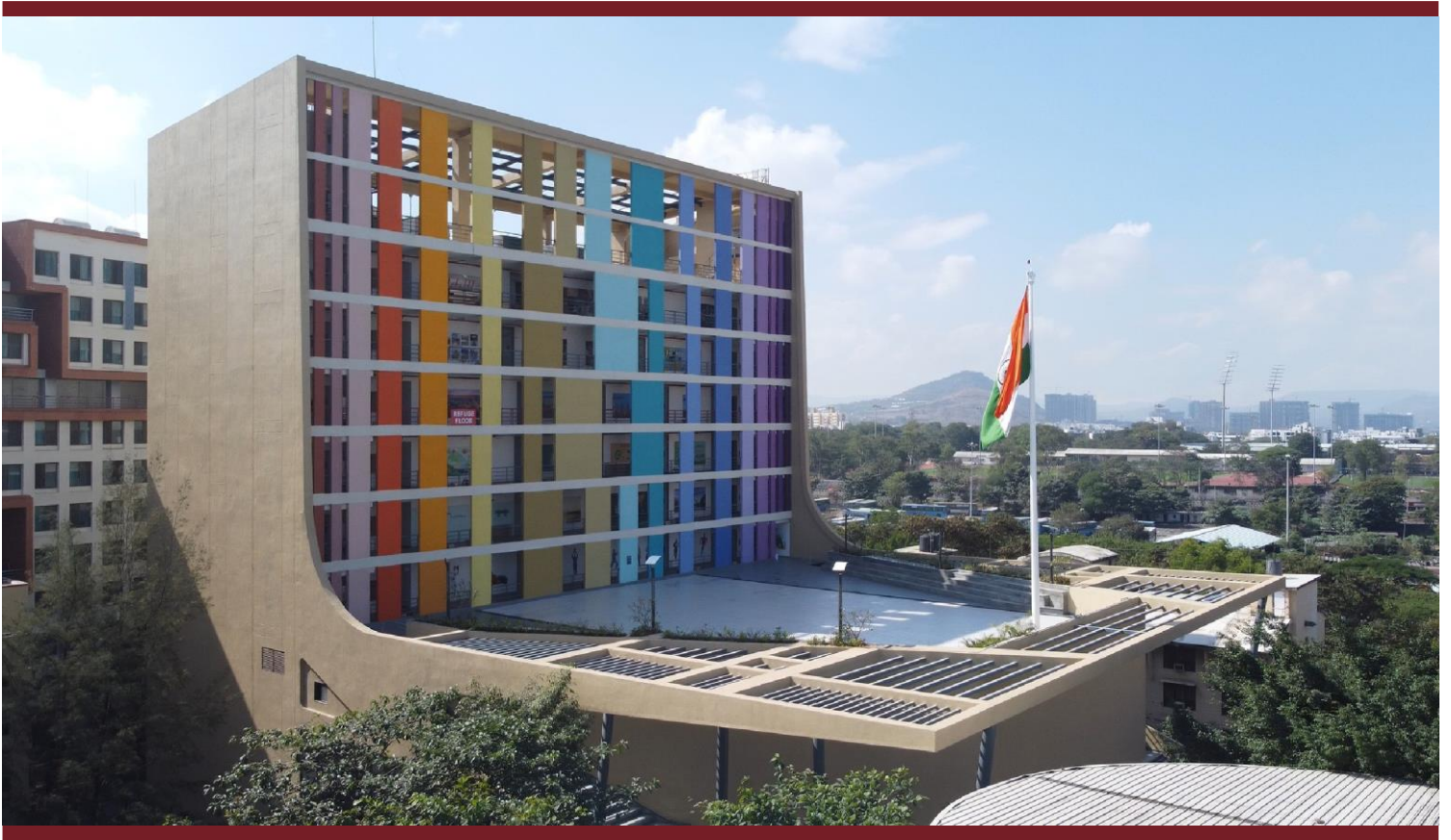
All scholars admitted through the admission process will be registered provisionally. After successful completion of the coursework, the registration status change from provisional to confirm registration. For more details on coursework and other processes visit the NICMAR Doctoral School website at <https://www.nicmar.ac.in/pune/school/nds>

15. Program Duration

The full-time Ph.D. program shall be for a minimum duration of three years from the date of registration to the final submission of the Thesis. However, a part-time Ph.D. shall be for a minimum duration of three years after registration confirmation (i.e., successful completion of the coursework).



NICMAR
UNIVERSITY
PUNE



Contact for Information:



NICMAR UNIVERSITY, PUNE
25/1, Balewadi, N.I.A. Post Office, Pune 411 045, India.



(020) - 66859339



nds@pune.nicmar.ac.in | www.nicmar.ac.in

