D Y PATIL
DEEMED TO BE
UNIVERSITY
SCHOOL OF
ARCHITECTURE
NAVI MUMBAI

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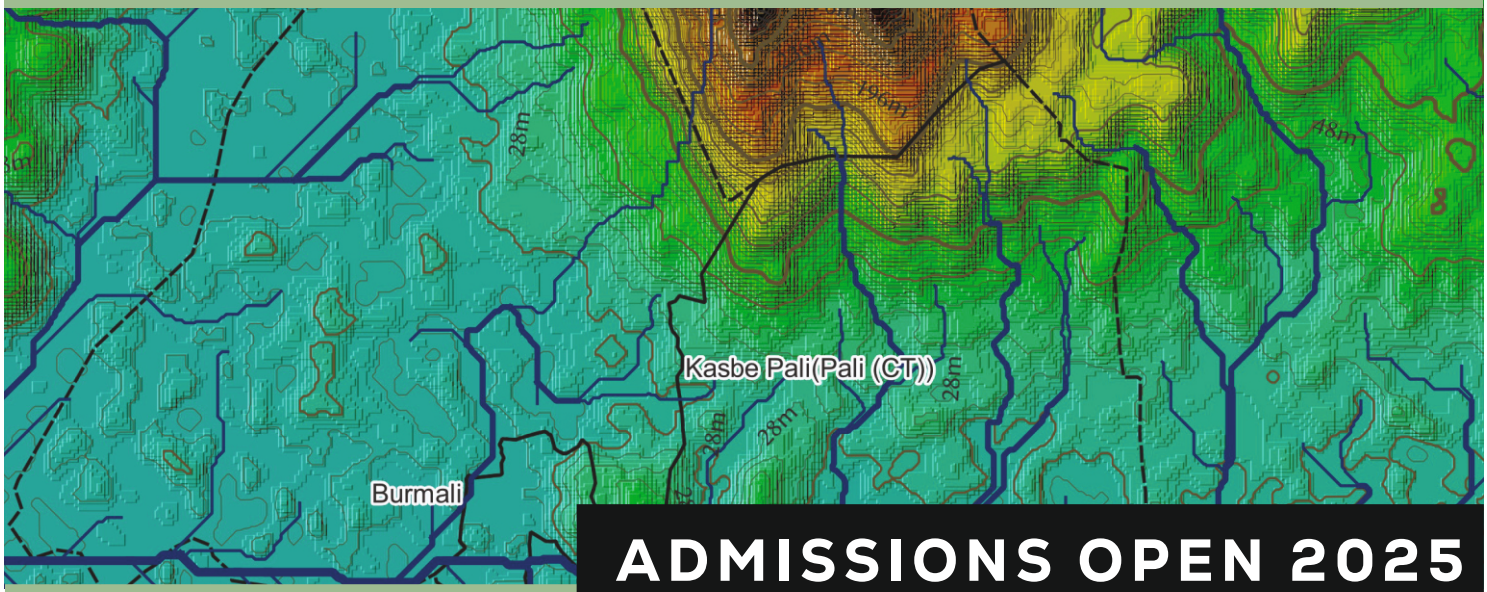


ADMISSIONS OPEN 2025

GIS

D.Y.PATIL SCHOOL OF ARCHITECTURE, NAVI MUMBAI

COURSES OFFERED:

- **Certificate Programme** (6 months)
  Eligibility: Bachelor's Degree, or 12th Pass, Working Professionals.
- **Short Course** (8 sessions, 3hrs. per session)
  Eligibility: Open to all.
- **Summer School** (To be announced shortly)

PROGRAMME HIGHLIGHTS

- Proficiency in Computational Design
- Skills to create physical prototypes
- Design Thinking and Problem-solving
- Collaboration and Communication
- Ethical and Sustainable Design
- Project Management
- Adaptability to emergent processes

www.dypatil.edu dypusoa.admissions@dypatil.edu +91 7039089594 (9am to 5pm)

Prof. Aparna Surve

Dean
D Y Patil deemed to be University School of Architecture,
Navi Mumbai

We at D Y Patil deemed to be University school of Architecture, Navi Mumbai are committed to making a better world, opening the doors for passionate learners. The school traverses on a visionary trilogy of Art, Architecture and Design that permeates same culture throughout all its pedagogical ventures of ever-expanding bank of UG & PG degree programmes in Architecture, Design and Urban Design and various Certificate programmes in Visual Arts, Design & Urban Studies that can be termed as science or social art or a combination of both! Hence, our current students and alumni have all shown fantastic skills and professionalism as problem solvers, supporters of social activities and creators of spaces for human kind to not just live but flourish.

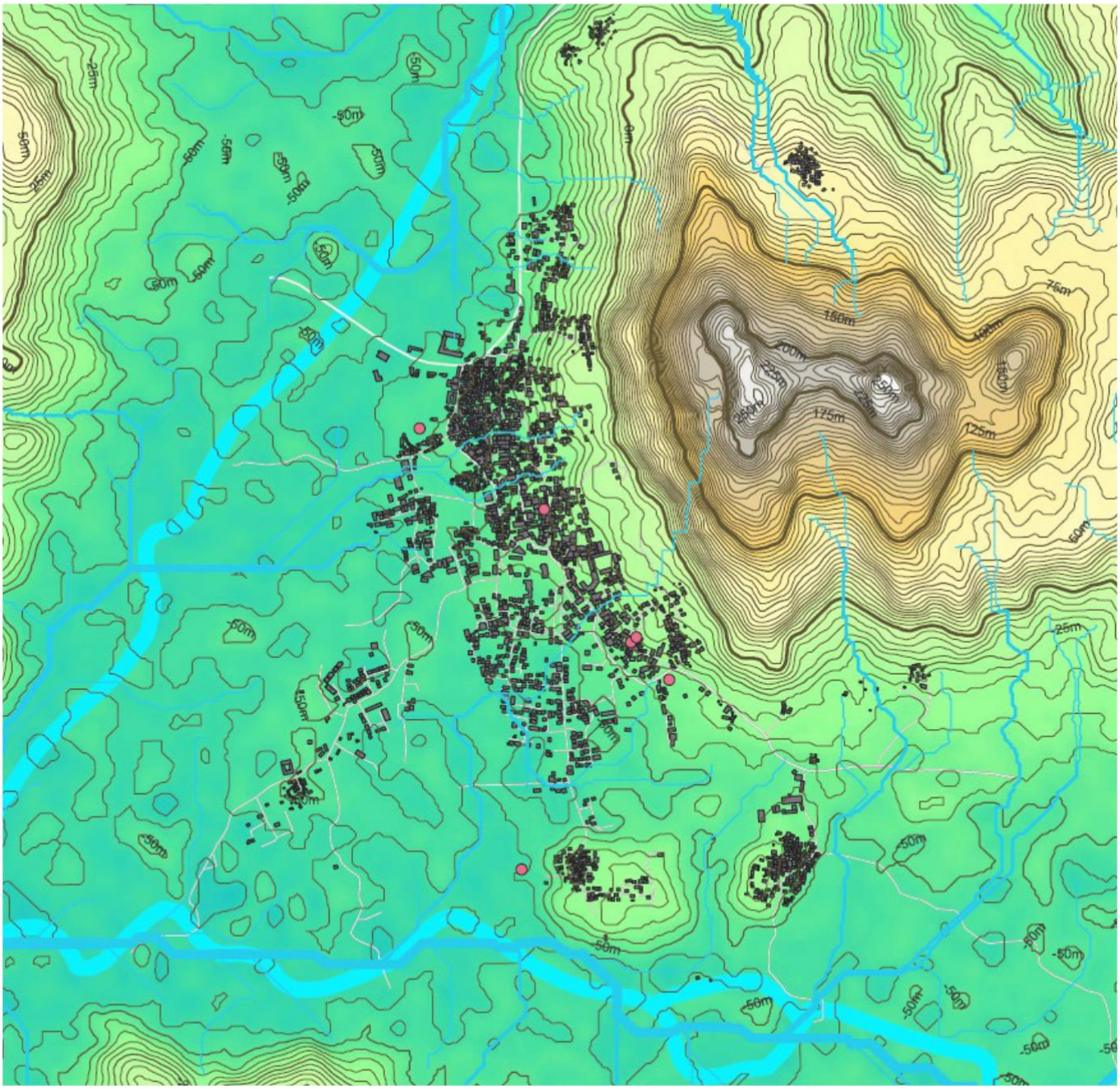
The school provides a platform for students to explore, experience and execute their innovations by engaging with diverse disciplines and skillsets under the mentorship of dedicated faculty, scholars and experts. Together we learn to tackle global challenges, work on a culture of serving and shaping the society through critical thinking, analytical approach, and creative mindset; translating ideas into actions by setting in a “culture of doing”.

The growth of students is nurtured by the faculties who themselves pursue excellence, allowing the minds to grow, developing an unseen foundation system, strong enough to support its potential for outward growth later in the professional field. The latter guide students to become professionals with an open mind and a sensitive approach towards the society and environment. Most importantly the school believes in constantly upgrading its robust and state of the art infrastructure comprising of various modern equipment, workshops, laboratories viz. Digital fabrication lab, Advanced model making lab, Mac- lab, Wacom lab, AR-VR lab, rapid-prototyping, sculpture & clay modelling, ceramics& pottery and art Studios, where it becomes a melting pot of various theoretical didactics and hands-on experimentation and innovation.

DY Patil Deemed to be University campus at the prominent location of smart city Navi Mumbai provides a suitable environment to become focused and successful Architects, Designers, Urban Designers and the Art practitioners of tomorrow. We welcome young minds with passion and creative energy, regardless of where they come from to be a part of the D Y family.

Certificate programme for Geographic Information System (GIS)

The Geographic Information Systems (GIS) Certificate Course, provided by D Y Patil deemed to be School of Architecture at DY Patil University, bridges the divide between spatial technology and urban planning. This course has been meticulously curated to promote an innovative, research-based, and sustainable approach to urban design, focusing on practical applicability and ethical problem-solving strategies. On recognising the paramount importance of GIS in navigating today's sustainability challenges, we welcome learners from diverse academic backgrounds and professions who aspire to become future-ready GIS experts.



About the Program - Geographic Information System (GIS)

The Geographic Information System (GIS) is a digital technology that integrates, analyses, and displays geographic information, becoming an essential tool for understanding spatial relationships and trends. Offered by D Y Patil School of Architecture, the GIS Certificate Programme aims to provide a comprehensive understanding of GIS, its application, and its transformative potential. It intends to bridge the gap between the burgeoning technological realm and the traditional discipline of urban planning. This programme promises an innovative, research-focused, and sustainable approach to urban and regional planning, infrastructure development, and environmental management. The curriculum will focus on delivering practical skills, teaching problem-solving strategies, and acknowledging the increasing relevance of GIS in tackling current challenges of sustainability and urbanisation.Open to learners from various academic backgrounds and professional spheres, the course will enable students to master GIS technology and become adept at handling spatial data. Upon completion, students will not only become proficient in the use of GIS software but also acquire the ability to effectively integrate spatial technology into a wide range of applications - from urban planning, transportation, and infrastructure development to environmental conservation, and more.

Through the GIS Certificate Programme, D Y Patil School of Architecture envisions creating a cadre of skilled GIS professionals who can navigate the intricacies of spatial technology with ease. By providing hands-on experience with real-world projects, this programme will offer students a unique opportunity to apply theoretical knowledge to practical problems. As GIS finds its way into more sectors, the program aims to foster professionals who can drive innovative solutions to spatial problems and lead the way towards a sustainable future.

Program Name - Geographic Information Systems (GIS)

Eligibility - 12th Pass/bachelor's degree/Working Professionals

Course Duration - 6 Months (full-time)

Weekly Schedule (Every Week):

Saturdays & Sundays: Core teaching days dedicated to theory and studio sessions, focused on the in-depth exploration of various GIS modules. Classes will cover both foundational and advanced topics, ensuring a balanced mix of lectures and hands-on learning. The weekend class durations will be five to six hours each day.

Wednesdays (Evening): A three-hour studio session will be held, providing students with a platform to engage in practical assignments and project work under expert guidance. This mid-week touchpoint allows for continuous learning and application.

Credits - 20

Academic Year - 2023 -24

Program Fee - RS 1,20,000/-

((NOT INCLUDED: Field trip and Final project material)

Vision
Statement

To provide GIS education, producing innovative thinkers and future-ready professionals who can effectively leverage spatial technologies in designing sustainable urban landscapes. We aspire to empower students with technical proficiency and critical thinking, enabling them to use GIS knowledge for impactful, equitable, and sustainable planning decisions.

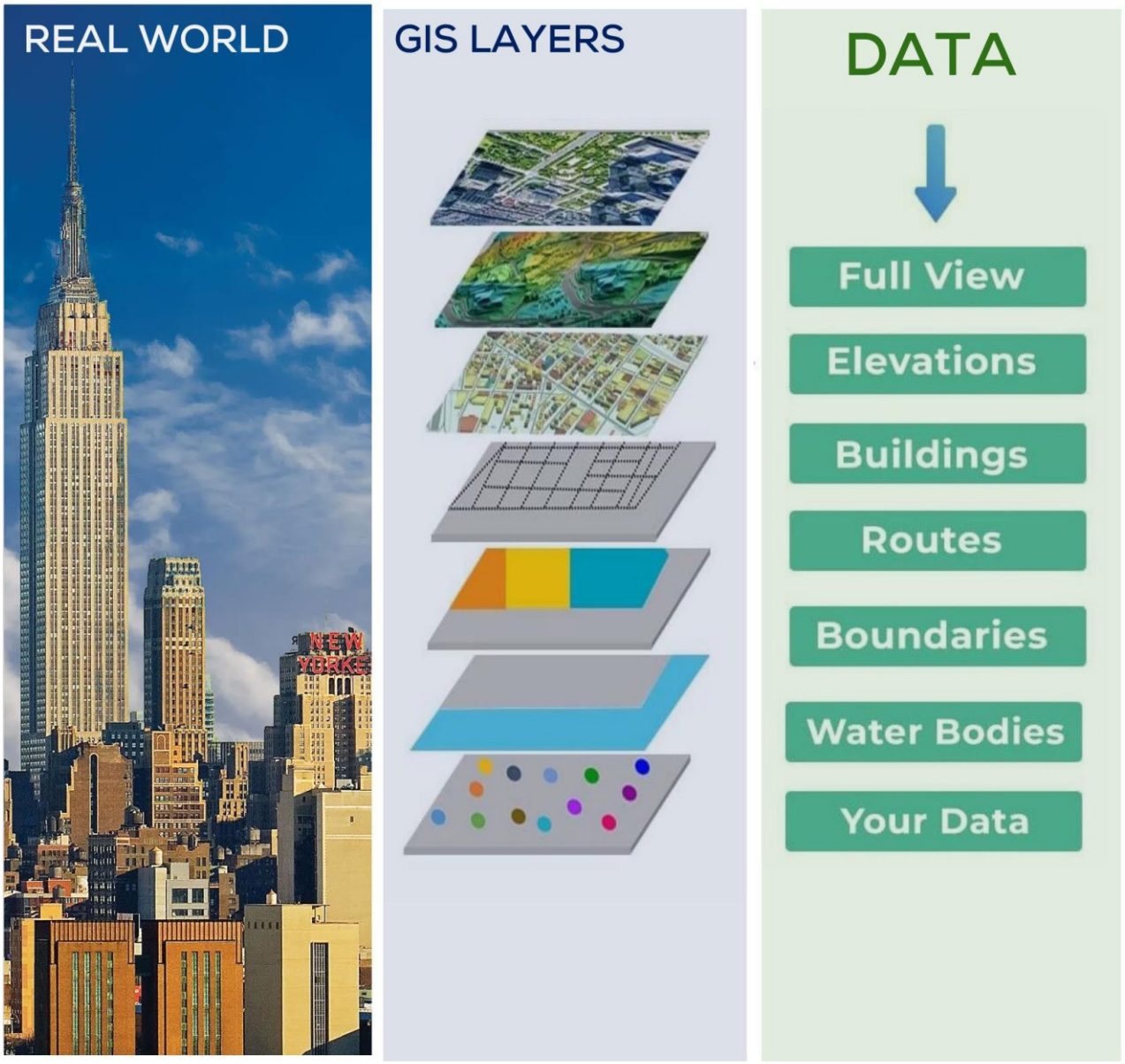
Mission
Statement

The Geographic Information Systems (GIS) Certificate Programme at D Y Patil deemed to be school of Architecture aims to offer an exhaustive and immersive learning experience that cohesively blends theoretical knowledge with hands-on application. The programme emphasises fostering research-driven learning through cutting-edge, both open-source and proprietary GIS platforms, thereby facilitating adept spatial data management and analysis. It strives to inculcate innovative thinking, preparing students to tackle intricate urban planning problems using GIS modelling and tools. The course further encourages a multidisciplinary approach, keeping learners updated with emerging GIS technologies, and endorsing sustainable urban design methodologies. Finally, the programme is committed to upholding the highest teaching standards, inspiring students to leverage their GIS expertise across a range of urban planning contexts and scenarios.

Programme Objectives

- Cultivate innovative thinking in students through in-depth understanding and application of GIS in urban planning and design.
- Incorporate research-based learning, using both proprietary and open-source GIS platforms, for effective geospatial data handling and analysis.
- Encourage practical application of GIS skills to create models, investigate urban planning issues, and present effective solutions.
- Keep students abreast with evolving GIS tools and techniques, fostering a sustainable and multidisciplinary approach to urban design.
- Prepare students to handle real-world situations effectively and ethically, producing future-ready professionals capable of tackling global sustainability challenges.

Course Details



This Geographic Information Systems (GIS) for Urban Planning and Design is a comprehensive, 20 credit program spread over six months. It provides a robust exploration of GIS, from fundamentals to advanced applications, particularly in the context of urban planning and design Structure The structure of the course is designed to promote interactive and hands-on learning, featuring:

• **Lectures:** Foundational and advanced GIS concepts will be delivered in a lecture format. Here, students will be introduced to a range of topics, from basic GIS terminology to complex spatial analysis techniques.

• **Studios:** Practical sessions or “studios” will complement theoretical learning from lectures. These sessions are designed to provide students with direct experience in using GIS software such as ArcGIS and QGIS, allowing them to apply learned concepts in a supportive environment. The studios will foster discussions, facilitate peer learning, and provide opportunities to explore the software’s potential.

• **Projects and Assignments:** The course emphasises experiential learning, and as such, students will be tasked with projects and assignments throughout the duration of the program. These activities will enable students to put their knowledge into practice, encouraging the application of GIS in various urban planning and design scenarios. Projects will cover a broad spectrum of topics, fostering creativity and critical thinking.

• **Discussions:** Regularly scheduled discussions will provide students with the opportunity to delve deeper into the subject matter, ask questions, clarify doubts, and share insights. These discussions will promote a collaborative learning environment and stimulate critical thinking around the course’s material.

• **Project Work:** Outside the scheduled hours, students will be allocated time for independent or group project work, allowing them to apply the learned concepts to real-world scenarios.

• **Flexible Learning**: The schedule is thoughtfully designed to cater to working professionals, with the majority of the classes scheduled over the weekends and one manageable weekday session.

Course Credit

SR No	COURSES	CODE	TOTAL
1	Introduction to GIS	GIS-CD01-01	3
2	Spatial Analysis and Modeling	GIS-CD02-02	3
3	GIS in Urban Planning	GIS-CD03-03	4
4	Remote Sensing and WebGIS	GIS-CD04-04	4
5	Advance GIS applications	GIS-CD05-05	3
6	GIS Project Management	GIS-CD06-06	1
7	Final Project	GIS-CD07-07	2
			20

GIS certificate course credit structure and the key modules.

1. Introduction to GIS

Provides a comprehensive overview of Geographic Information Systems, its components, data concepts, and applications. This course aims to familiarise students with the GIS environment through a hands-on exploration of various GIS applications.

2. Spatial Analysis and Modelling

Explores the spatial analysis capabilities of GIS and various modelling techniques. The course provides a practical understanding of spatial data manipulation and prepares students to conduct insightful spatial analyses using GIS tools.

3. GIS in Urban Planning

Offers an in-depth understanding of the application of Geographic Information Systems in the domain of urban planning and design. This course aims to enhance students' proficiency in analysing and interpreting geospatial data for effective urban planning.

4. Remote Sensing and Web GIS

It is a comprehensive exploration of remote sensing techniques and the application of Web GIS, especially in the realm of urban planning. The course aims to deepen students' knowledge and skills in image classification, analysis, and the integration of remote sensing with Web GIS.

5. Advanced GIS Applications

It offers an in-depth study of the sophisticated applications and capabilities of Geographic Information Systems. This module aims to foster an understanding of the progressive aspects of GIS and how they are applied in the realm of urban planning and design, including participatory GIS, modeling and visualization, and GIS for smart cities.

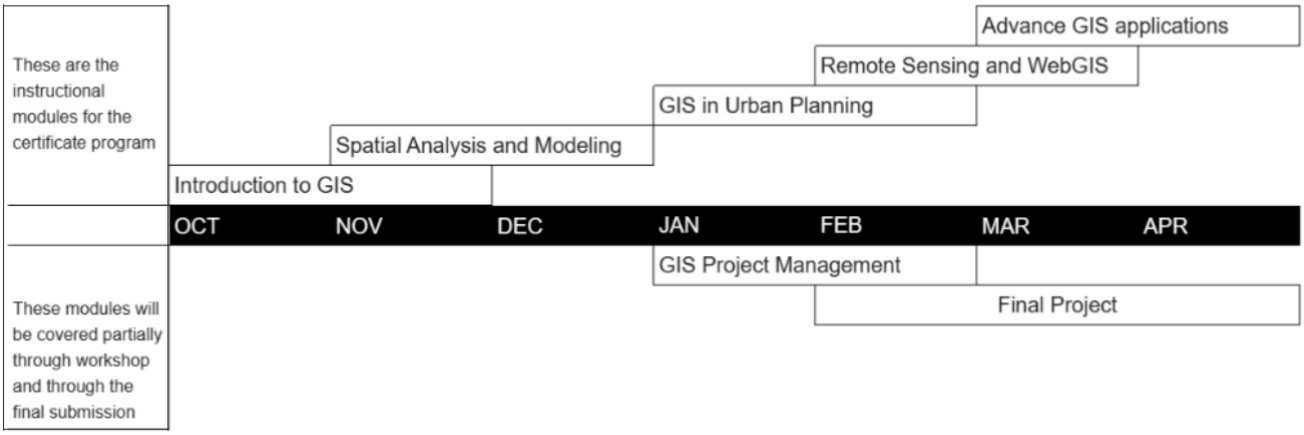
6. GIS Project Management

It is designed to impart knowledge and understanding of project management principles within the scope of GIS. This course will provide students with the necessary tools and techniques to effectively manage GIS projects. It will also introduce students to project planning and scheduling and will provide them with hands-on experience in developing a GIS project plan.

7. Final Project

It is a capstone module, aimed at allowing students to apply all the GIS concepts, skills, and techniques learned throughout the program in a single, comprehensive project. This course involves the proposal, execution, and presentation of a GIS project, integrating the use of GIS software tools and spatial analysis for urban planning and design.

Course Timeline



GIS certificate course six-month timeline with the course modules. We intend to introduce the program by the last week of October or First week of November.

Faculty

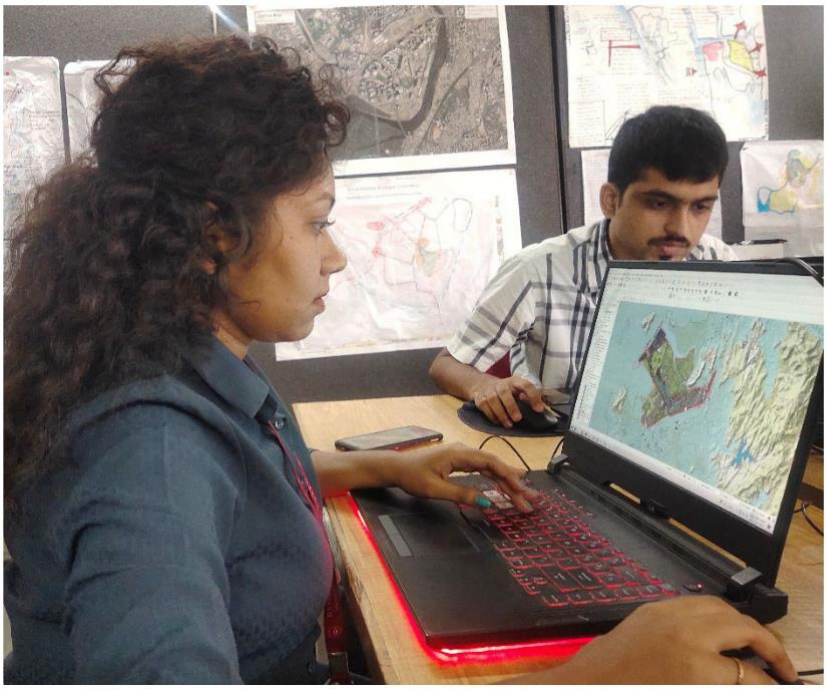
Prof. Sandeep Mahato

Assistant Professor, **DYPU: SOA**
Doctoral researcher at **TISS, Mumbai**
Expertise in Remote sensing

Prof. Megha Sharma

Assistant Professor, **DYPU: SOA**
Academic Coordinator master's in urban design
Expertise in urban infrastructure development.

GIS Lab & Software Infrastructure



The DYPUSOA GIS Lab has been designed as a hub for geospatial innovation, research, and practical application. With a dual focus on both proprietary and open-source platforms, the lab offers a rich, hands-on learning environment for aspiring GIS professionals.

Proprietary Applications

The lab features a full suite of ArcGIS applications, ensuring that students gain expertise in widely-used industry-standard tools. From data visualization to complex spatial analyses, our ArcGIS setup allows for an extensive range of GIS functionalities.

Open-Source Applications

In addition to ArcGIS, we believe in the importance of diverse software competencies. That's why our lab also includes workstations equipped with QGIS, an open-source platform that is gaining momentum in the geospatial community. This enables students to become proficient in multiple GIS platforms, broadening their skill set and enhancing their employability.

Programming and Scripting

To further augment the GIS learning experience, the lab provides resources for coding and scripting through Python. Understanding Python allows students to customize GIS applications and perform advanced data manipulation tasks that are often required in professional settings.

Earth Engine Modules & Other Platforms

We also offer modules based on Google Earth Engine, Microsoft Planetary Computer, Sentinel Hub, and Planet Scope for those interested in a diverse range of remote sensing applications. These platforms enable users to visualize and analyze a vast array of geospatial data from multiple sources, each offering unique capabilities crucial for sustainable urban planning, environmental conservation, and other specialized fields.

Programme Outcomes

• Apply comprehensive understanding of GIS in the context of urban planning and design, leveraging both commercial and open-source GIS platforms.

• Promote multidisciplinary thought processes by analyzing and interpreting spatial data to identify and propose solutions to urban planning challenges.

• Use fundamental GIS knowledge in practical applications, designing models, and presenting solutions for intricate urban planning and design problems.

• Adopt innovative design strategies and stay abreast with the latest trends in sustainable urban planning, employing modern GIS tools and methods.

• Invoke critical thinking through in-depth research, using GIS innovatively in real-world situations.

• Ensure alignment with emerging design strategies, employing GIS expertise ethically in diverse urban planning and design scenarios.