

Natural Resource Safeguards Course Curriculum Established at India's Sushant University

Building the Future Workforce for Sustainable Infrastructure Planning

India's aim to become a developed nation by 2047 is reflected in substantial investments in infrastructure development, with many ambitious projects aimed at strengthening road connectivity nationwide. However, such rapid development often comes with environmental consequences, exacerbated by challenges such as a lack of trained professionals, particularly engineers and planners, who may not consider or may inadequately address environmental concerns during infrastructure development.

If not planned properly with sufficient considerations for biodiversity and ecosystem preservation, the construction of linear infrastructure such as highways, railways, irrigation canals, and transmission lines can pose a major threat to the country's rich biodiversity. Poorly planned linear infrastructure can impede wildlife movement, fragment intact natural habitats, deplete natural resources, and cause widespread land-use conversion when natural habitats are removed or altered to meet other land needs.

Within the infrastructure sector, there is a shortage of skilled professionals capable of integrating natural resource safeguards into infrastructure development. "There is a need for a better understanding among professionals such as engineers, designers, and planners of natural resource safeguards in linear infrastructure development," shares Mr. R.S. Sharma,

President of the Consulting Engineers Association of India. WWF-India—through the USAID-funded ALIGN Project—has taken proactive steps to address this gap.



First cohort of Sushant University students who undertook the course along with faculty members Ar. Shiv Marwaha (middle row, eighth from left) and Dr. Ridhima Solanki (middle row, seventh from left), also a Coordinator for the ALIGN Project (Credit: ©WWF-India)

Since 2020, WWF-India has collaborated with Sushant University, located in Gurugram, India, to develop a specialized course in "Infrastructure Planning" aimed at equipping future generations with a deep understanding of natural resource safeguards such as highway, railway, or canal crossing structures for wildlife. **This collaboration culminated in the course's launch in the fall of 2023, marking a significant milestone in India's sustainable development education.**



“Our students have exhibited not only academic excellence but also incredible commitment and interest toward protecting the environment.”

DR. TEJWANT SINGH BRAR,
HEAD OF DEPARTMENT, SCHOOL OF ART AND ARCHITECTURE,
SUSHANT UNIVERSITY

By empowering students with the knowledge and skills to incorporate environmental safeguards into infrastructure projects, this educational initiative aims to enhance the quality of infrastructure planning and create professionals capable of steering India toward sustainable infrastructure development. The “Infrastructure Planning” course, introduced in the third semester of the Master of Science program, has studio and field components.

The first instance of such a curriculum in India, the course curriculum design and implementation faced challenges due to a lack of existing references for integrating natural resource safeguards into infrastructure development. University faculty members—including Dr. Tejwant Singh Brar, Head of the Department at the School of Art and Architecture, and Ar. Shiv Marwaha, who is also a consultant for the ALIGN Project—made invaluable contributions to achieve this milestone and are proud of the course’s successful rollout a year after its launch.



“I was astonished to figure out that Sushant University offers a course on ‘Infrastructure Planning’. I feel happy that I pursued this course, which already has broadened my vision on how an architect and planner can contribute to shaping a better landscape.”

AR. TANMAY GOYAL,
GRADUATE,
SCHOOL OF ART AND ARCHITECTURE,
SUSHANT UNIVERSITY

Dr. Brar acknowledges that WWF-India’s support was crucial in this endeavor. He further states that his students have exhibited not only academic excellence but also incredible commitment and interest in protecting the environment. The university will continue to offer the course to new groups of students in the upcoming years.

Architect Tanmay Goyal is among 20 master’s degree graduates from the School of Art and Architecture at Sushant University. Tanmay was seeking an opportunity to pursue his master’s degree in planning, as he always had a passion for nature conservation and wanted to use planning as a tool to minimize the negative impacts of infrastructure on landscapes. This newly introduced course was a perfect fit for him. As part of the course, he conducted research and pursued his thesis, *Minimizing the Impact of Infrastructure Development on Wildlife Corridors*. “The master’s degree course, particularly the thesis work, has expanded my understanding and enlightened me



about the broader scope of a planner beyond just planning the infrastructure, including considerations for conservation of landscapes,” he shares. The first cohort of students have completed their field research and have submitted [a group report on linear infrastructure planning](#) to the university.

WWF-India has also been supporting student participation in other capacity-enhancing activities. “Apart from providing knowledge to the students, WWF-India is also committed to enhancing their understanding by providing internship opportunities and involving them in workshops,” explains Dr. Dipankar Ghose, Senior Director, Biodiversity Conservation for WWF-India.

Building on the success at Sushant University, WWF-India is collaborating with the Manipal Academy of Higher Education (MAHE) in Manipal, India, to also introduce courses that embed nature conservation

into their curricula. As the initial steps, guest lectures were conducted on “Environmental Policy,” “Biodiversity Conservation,” and “Urban Infrastructure and Disaster Resilience” in bachelor’s and master’s degree courses, with more lectures planned for the upcoming months.

The inclusion of the “Infrastructure Planning” course at a university in India serves as a fundamental cornerstone for integrating concepts and knowledge related to natural resource safeguards in infrastructure development. As part of the ALIGN Project and in partnership with Sushant University, WWF-India aims to create a workforce of planning professionals committed to sustainable infrastructure development who will not just consider the viability of infrastructure but be thoughtful about safeguarding wildlife and the environment. ■ *To learn more about the ALIGN Project, visit alignproject.org.*

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