

Repositioning Doctoral Programmes

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News and Views

Last year IIT Jodhpur has celebrated 10 years of excellence in teaching and research. In continuation of its mission of conducting high quality research, 2019 onwards the Institute has revamped its doctoral programmes in a more systematic and comprehensive manner with a clear vision towards delivering highly trained research manpower, and impactful research and translation. In this direction, the Institute has repositioned its doctoral programmes by introducing new and specialized programmes along with new interdisciplinary approach and platform, enhancing the rigor of the training process for the doctoral candidates, and also putting forward a deliberate effort towards translation of the research output.



In the process, the Institute has started new doctoral programmes in Chemical Engineering, Civil and Infrastructure Engineering, and Management from 2020 in the areas of contemporary global interest as well as in emerging areas. A first of its kind, the Institute is launching a joint doctoral programme with AIIMS Jodhpur from July 2020. The doctoral programme in Medical Technologies, jointly offered by IIT Jodhpur and AIIMS Jodhpur, are uniquely placed wherein one of the major objectives is to produce a pool of Medical Technologists in the country who shall develop globally competitive medical and healthcare technologies to address the current as well as emerging challenges of the future. This programme has been conceived and designed in a way to not only knit together the relevant key elements of Medical Science and Engineering Technology but to also have desired emphasis on translational R&D, innovation, technology management and entrepreneurship aspects required for realizing the deployable techniques, technologies, devices and systems in medical and healthcare domains. Moreover, to establish its national and global presence and to enrich its competitive research ecosystem, the Institute is also planning to offer new joint doctoral programmes. The Institute has augmented the unique MTech-PhD dual degree programmes in specialized areas as well in some of the thrust areas. Fourteen such MTech-PhD programmes are currently being offered at IIT Jodhpur. This new avenue has efficiently improved the overall quality of the doctoral research ecosystem.

Towards enhancing the rigor of training of the doctoral candidates, the Institute has developed and implemented a new set of regulations to be followed during the tenure of a candidate at IIT Jodhpur. Carefully designed separate academic credit requirements have been set for regular and interdisciplinary doctoral programmes to gain required knowledge in the area. Further, to maintain the quality of the research work throughout the duration of programme, the continuation criteria and eligibility for assistantship after each semester, as well as at the end of the course work has been set, annual progress monitoring meeting is planned, and a qualifier requirement including four components with rigorous assessment during comprehensive examination is in place. These new set of regulations, which are in effect from 2019, have significantly promoted the high standard of the doctoral research and will certainly help in producing highly-trained research manpower.

During doctoral research, the research advancements are generally based on the outcome of the conventional search of the prior work reported, typically, in conference proceedings and journal articles. Many a times, prior work may contain very important and commercially impactful contributions that have been patented. Before starting the research in the chosen direction, it is prudent to do **patent landscaping**, in addition to the conventional search. Among other nuances in the IIT Jodhpur IPR Policy, which has been delicately drafted and implemented recently, every doctoral candidate is expected to conduct a holistic literature search covering all forms of literature including patent documents, and formally submit a comprehensive technology landscape on her/his chosen research work. This is an integral part of his/her research work, prior to starting the research, and has been included as a part of a state-of-the-art

seminar - formally starting the research work. It was therefore thought essential to expose all the doctoral candidates to basics of patent searching and deriving technology-based information from patent documents for the preparation of their respective technology landscapes. In addition to this, a **course on patent landscaping** is a compulsory course to be taken by all the doctoral candidates at IIT Jodhpur. This has enhanced the impact of the doctoral research outcome of the Institute.

Moreover, IIT Jodhpur extends all support to boost **translational research** in campus and implemented several major schemes in last one year. The Office of R&D provides a one-year fellowship to those doctoral candidates whose thesis work is aligned or projected towards translational output. This support is available even after submission of the thesis. The candidate has to present the plan and show the translational component in front of the duly constituted expert committee. This scheme has opened up a new avenue in the present research ecosystem of the Institute.

To meet today's technological challenges and pave a path towards a significant boost in impactful research in campus, the Institute has created an **interdisciplinary platform** to offer doctoral degrees. Disruptive in nature, the platform is aimed to support the vision of creating ecosystem for competitive and cutting-edge research. IIT Jodhpur is one of the pioneering institutes in the country currently that offer interdisciplinary doctoral degrees in **Digital Humanities, Space Science and Technology, Quantum Information and Computation, Robotics and Mobility Systems, Science of Intelligence, Smart Healthcare, and Internet of Things and Applications**. These interdisciplinary doctoral programmes have emerged as multi-disciplinary initiative to solve a problem which requires an integrated approach through fusion of knowledge as well as expertise from multiple fields. These doctoral programmes offer exclusive opportunities to redraw conventional disciplinary boundaries among the basic sciences, engineering, and humanities and social science. Doctoral students opting for these programmes are contributing towards integrating disciplinary approaches of the respective domains with cross-disciplinary theorising and research. Hence, these interdisciplinary programmes have repositioned the doctoral programmes of the Institute and have given an edge.

With the unique philosophy adopted and accordingly policies/schemes implemented by the institute to reposition the doctoral programmes, as Associate Dean (Academics - Post Graduate Programmes), I strongly believe that the quality of doctoral research as well as the standard of candidates who will be eligible for PhD degree would be significantly enhanced in next couple of years. Moreover, research output in terms of publications and translations will increase manifolds.



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