

## Interdisciplinary PhD Syllabus

The entrance for the Interdisciplinary PhD expects the candidates to appear for the Research Methodology MCQ exam along with two descriptive questions. One of the questions will explore the candidate's area of interest and its interdisciplinary connections. The second question will expect the candidate to respond to contemporary 'wicked problems' through an interdisciplinary approach. The candidates can situate their responses within their specialization while integrating related/pertinent concepts and theories.

Following are the broad areas that will be addressed and tested during the exam.

Part A: Mandatory question: Candidate's area of research interest and its interdisciplinary connections.

Part B: Question based on the following themes

- *AI research and ethics*

Over the last few years, AI has become a part of our academic reality. Discussions have centred on AI's role in enhancing human efficiency, streamlining task execution, and making information more accessible. While the emancipatory potential of AI has been underlined, ethical concerns surrounding its use have also increased. Researchers have raised questions about the motivations behind how AI is designed, who it includes and excludes, and whether it is creating new normative codes. Based on the training data, AI has often been caught reproducing social biases, hallucinating, and generating misinformation. Consequently, in the age of AI, research in the Humanities and Social Sciences has become an even more responsible task as we prioritize subjectivities and contexts. As brain-computer interfaces have begun to impact our daily lives, developing skills and frameworks for the ethical use of AI has become essential. Both in research as well as writing, avoiding cognitive debt to AI and retaining command over one's own work have emerged as a matter of critical importance.

- *Knowledge systems: politics and identity*

Knowledge systems are deeply embedded within culture, personality, identity and social structures. Contrastingly, knowledge systems are also shaped by power politics and identity and legitimize whose voices are authorized to speak and can be heard. Knowledge is validated across disciplines like sociology, anthropology, psychology, philosophy and history, through contemporary academic inquiry. Literature and oral traditions become a crucial site, where these tensions are expressed and negotiated, engaging with the politics of identity through representations of race, caste, class, gender, and nation. Likewise, culture and society play a central role in shaping knowledge systems, informing how communities interpret the world and transmit meanings across disciplines and generations. Gender, further influences both the creation and reception of knowledge. Indigenous knowledge systems offer alternative

epistemologies grounded in lived experiences, ecological balances, and collective memories, challenging dominant universalist claims. In contemporary discourse, the intersection of disciplines underscores the importance of rethinking knowledge as plural, situated, contextualised and contested rather than fixed and universal. Such an approach enables a critical re-evaluation of established canons and methodologies, opening up intellectual space for alternative perspectives and frameworks.

- *Experiences of human diversity:*

Human diversity refers to a vast range of physical, cultural and genetic differences which shape how communities interact with each other and their surroundings. The diversity of human experiences and the strategies that individuals and communities resort to, to navigate social and cultural spaces is multifarious. This diversity is closely linked to sustainability as different communities develop distinct ways of using, managing and conserving their resources which are based on their cultural and environmental practices. These varied knowledge systems lead to an adaptive and holistic approach to sustainability. Technology as a critical driver of sustainability enables conservation and optimisation of energy efficiency. However, technology also plays a dual role as it also contributes to environmental degradation due to its role in the industrial process but at the same time also offers solutions to such problems. Thus the relation and interdependence between society, economy, and technology is complex. This interconnectedness becomes especially significant in the context of climate change as the impact of climate change is not uniform and is experienced differently across communities. Human diversity influences how communities respond to climate change. Local and indigenous knowledge systems can play a crucial role in both mitigation and adaptation strategies, such as sustainable agriculture, water conservation, and disaster management. Technology further supports these efforts through innovations like renewable energy and climate monitoring systems, though its benefits are unevenly distributed. Therefore, an inclusive approach that integrates diverse knowledge systems with equitable technological solutions is essential for addressing climate change and achieving sustainable futures across different communities.

- *One health - Integrated Interdisciplinary approach to global health security*

The One Health model promotes a coordinated and holistic approach to public health by recognizing the interconnections between humans, animals, and the environment. It emphasizes integrating seemingly distinct sectors such as health, food, water, energy, and environmental management to prevent and control public health threats, including emerging infectious diseases, antimicrobial resistance, and food safety issues. This approach can operate across community, national, regional, and global levels and depends on effective governance, communication, collaboration, and coordination among multiple stakeholders. By linking human, animal, and environmental health, the One Health framework enables comprehensive disease management, from prevention and early detection to preparedness, response, and control, thereby, strengthening global health security. For example, outbreaks such as SARS COVID-19, or H1N1

influenza could have been more effectively managed using a One Health approach by addressing their zoonotic origins, environmental factors, and human transmission pathways in an integrated manner.

- *Society and science*

Society and science analyses the impacts of science on human well-being, natural environment, and social inequality, highlighting asymmetries in access to knowledge, post-innovation risk, and benefit across different social groups. It examines the dynamic, plural relationship between the progress of scientific knowledge and social structures, processes, institutions, and the world view. Specifically, society and science covers the historical evolution of scientific knowledge from pre-modern natural philosophy to modern institutionalized research. It includes how scientific paradigms reshaped worldviews, global politics, national economy, and everyday life, shaping how funding priorities are set in research practices. State agendas, gendered, caste based hierarchies, and market logics influence what questions are asked, which disciplines are privileged, and whose knowledge counts. It also critically evaluates how techno-scientific ventures in medicine, ICTs, biotechnology, genetics, AI, and many more shape and are shaped by power relations, social inequalities, and democratic participation. It also studies public perception of popular scientific innovation and its impact on society, while interpreting and reinterpreting science-society relations from a critical point of view, such as feminist and postcolonial critiques of science.

**Rubric and Expectations:**

Research scholars aspiring to undertake an interdisciplinary PhD should be able to locate their responses across disciplines. The aspirants are expected to be aware of the emerging and contemporary ideas and debates in global research.

The essay type questions will examine the candidate's ability to:

- critically analyse a phenomenon and communicate one's ideas.
- demonstrate in-depth understanding of disciplinary knowledge and critical thinking with an interdisciplinary approach.
- formulate a coherent, well-structured argument, with a clear thesis and logical progression of ideas.
- show familiarity with critical concepts, and theoretical approaches.