

Manipal Centre for Natural Sciences

Manipal Centre for Natural Sciences (MCNS) is a “Centre of Excellence” at Manipal Academy of Higher Education dedicated to the pursuit of fundamental research. MCNS offers a regular PhD program for those who completed a Master's degree, and an integrated Ph.D. program for those who completed a Bachelor's degree (BSc / BE / BTech). The objective of both programs is to nurture researchers who will work in the forefront areas of natural sciences. The procedure for applying to the **regular Ph.D. program** is explained below.

Ph.D. Projects Offered in 2023-24

In the current call, projects in the following areas are offered:

PHYSICS

Cosmic Explosions:

1) Multi-wavelength study of cosmic catastrophes like Supernovae, Superluminous Supernovae, and their after effects

Extragalactic Astronomy and Cosmology:

- 2) Study of radio galaxies and supermassive binary black hole systems using radio interferometric data
- 3) Understanding particle acceleration and cosmic magnetic fields from interacting galaxy clusters using radio interferometric observations
- 4) Exploring theoretical models of cosmology and making predictions to multi-messenger observations, with emphasis on predictions to gravitational wave observations
- 5) Identification and quantification of cosmic structures to study the cosmological parameters

General Relativistic Effects in Astrophysics:

6) Transmutation of a neutron star / white dwarf to a black hole

Particle Physics:

- 7) Probing New Physics: Exploration of Left-Right Scenarios at the Large Hadron Collider(LHC) and Beyond
- 8) Investigation of Beyond Standard Model(BSM) Physics through the window of low energy precision observable

Computational Physics:

- 9) Magnetism and Spin Selectivity of Chiral Molecules
- 10) Modelling of Molecular Quantum Bits for Quantum Information Applications

CHEMISTRY

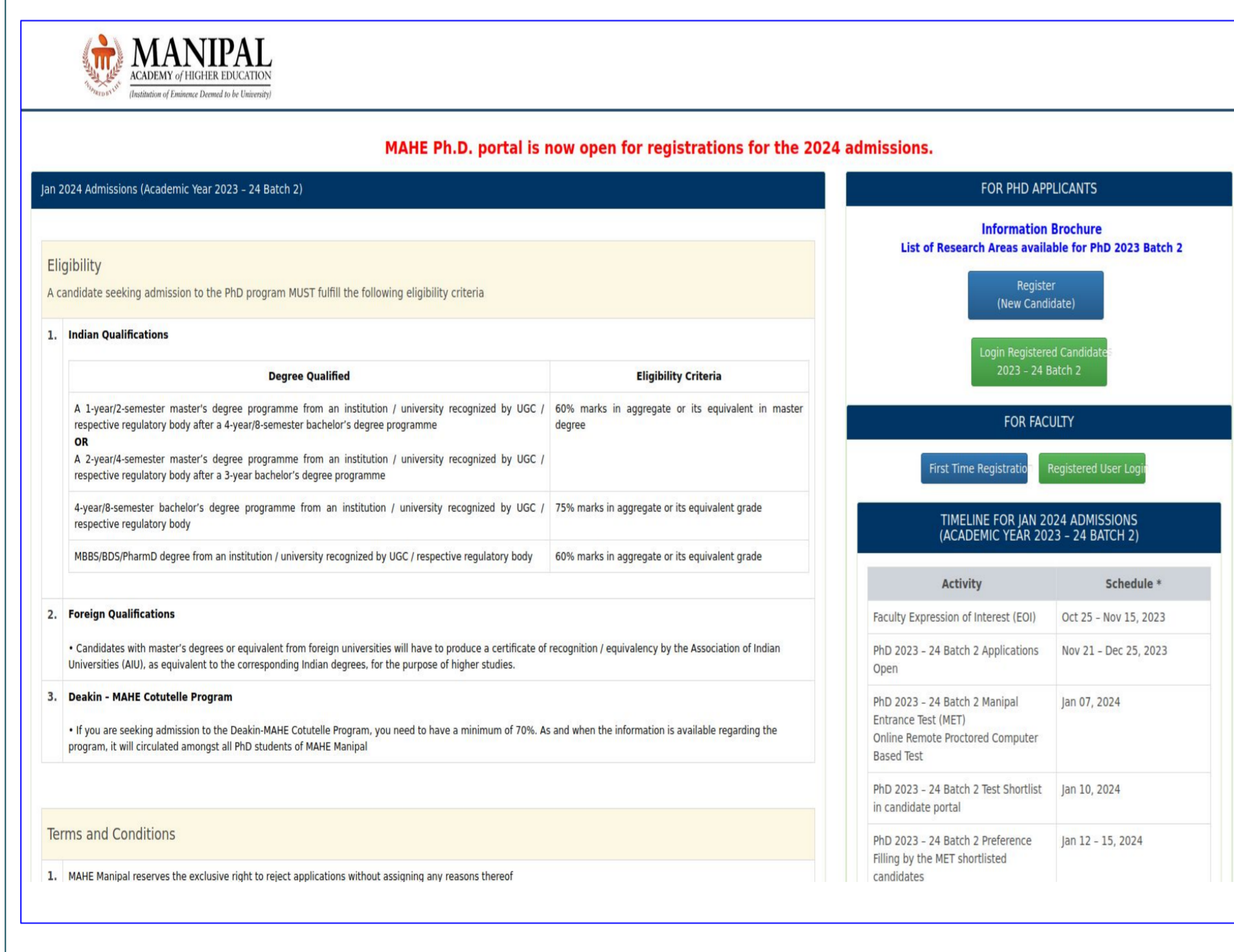
Computational Chemistry:

- 1) Computational Study of Spin Catalytic Reactions
- 2) Computational design of heterogenous catalyst

Online Application

Step 1: Go to the MAHE Ph.D. portal

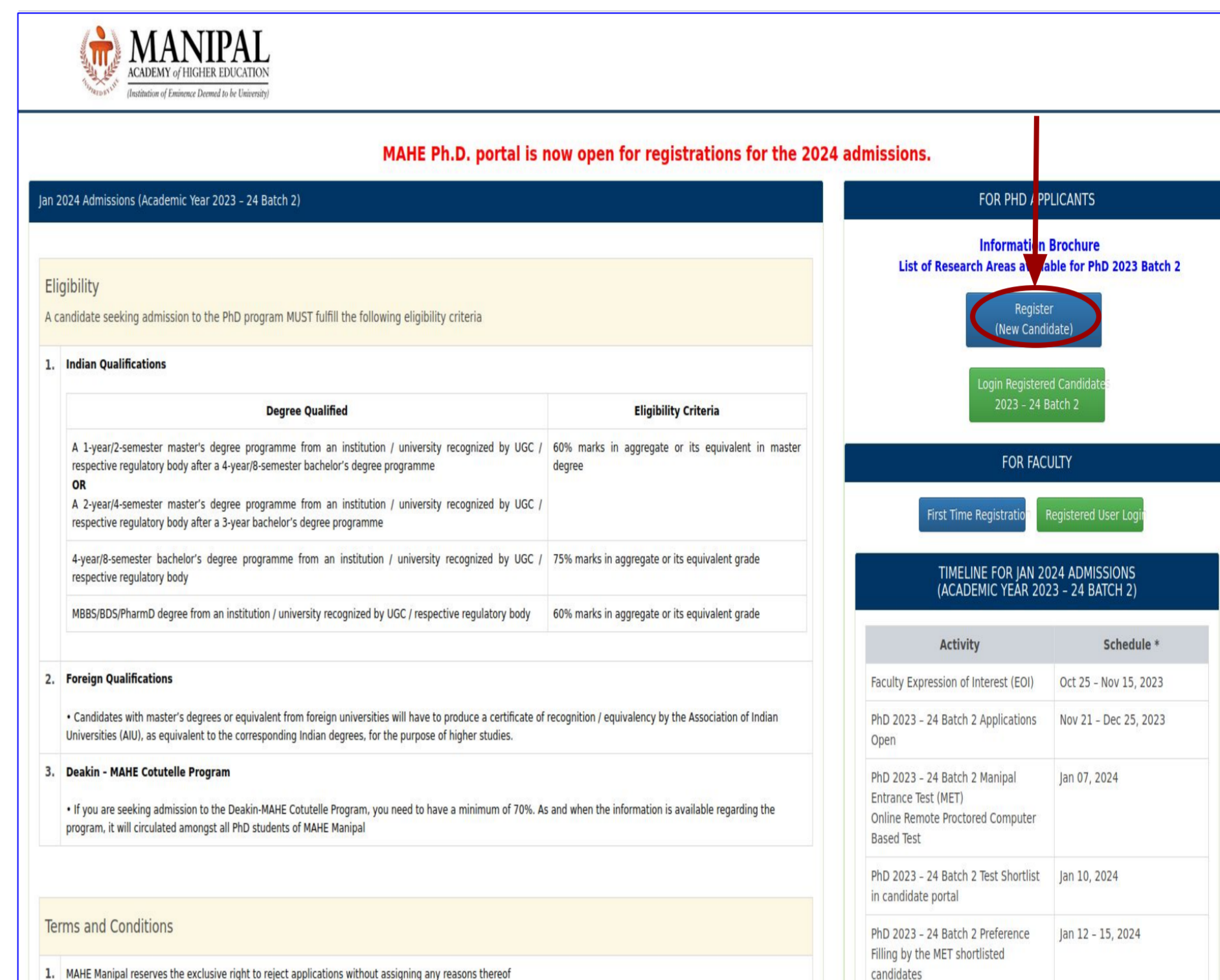
<https://mahephd.azurewebsites.net/#no-back-button>



The screenshot shows the MAHE Ph.D. portal registration page. It includes the MAHE logo, a banner stating "MAHE Ph.D. portal is now open for registrations for the 2024 admissions.", and a navigation menu with options for "FOR PHD APPLICANTS" and "FOR FACULTY". The "FOR PHD APPLICANTS" section contains links for "Information Brochure", "List of Research Areas available for PhD 2023 Batch 2", "Register (New Candidate)", and "Login Registered Candidate 2023 - 24 Batch 2". The "FOR FACULTY" section has "First Time Registration" and "Registered User Login" links. A "TIMELINE FOR JAN 2024 ADMISSIONS (ACADEMIC YEAR 2023 - 24 BATCH 2)" table is also visible, listing activities like "Faculty Expression of Interest (EOI)", "Applications Open", "Entrance Test (MET)", and "Preference Filling" with their respective dates.

Registering for Application

Step 2: Select the “Register (New Candidate)” option

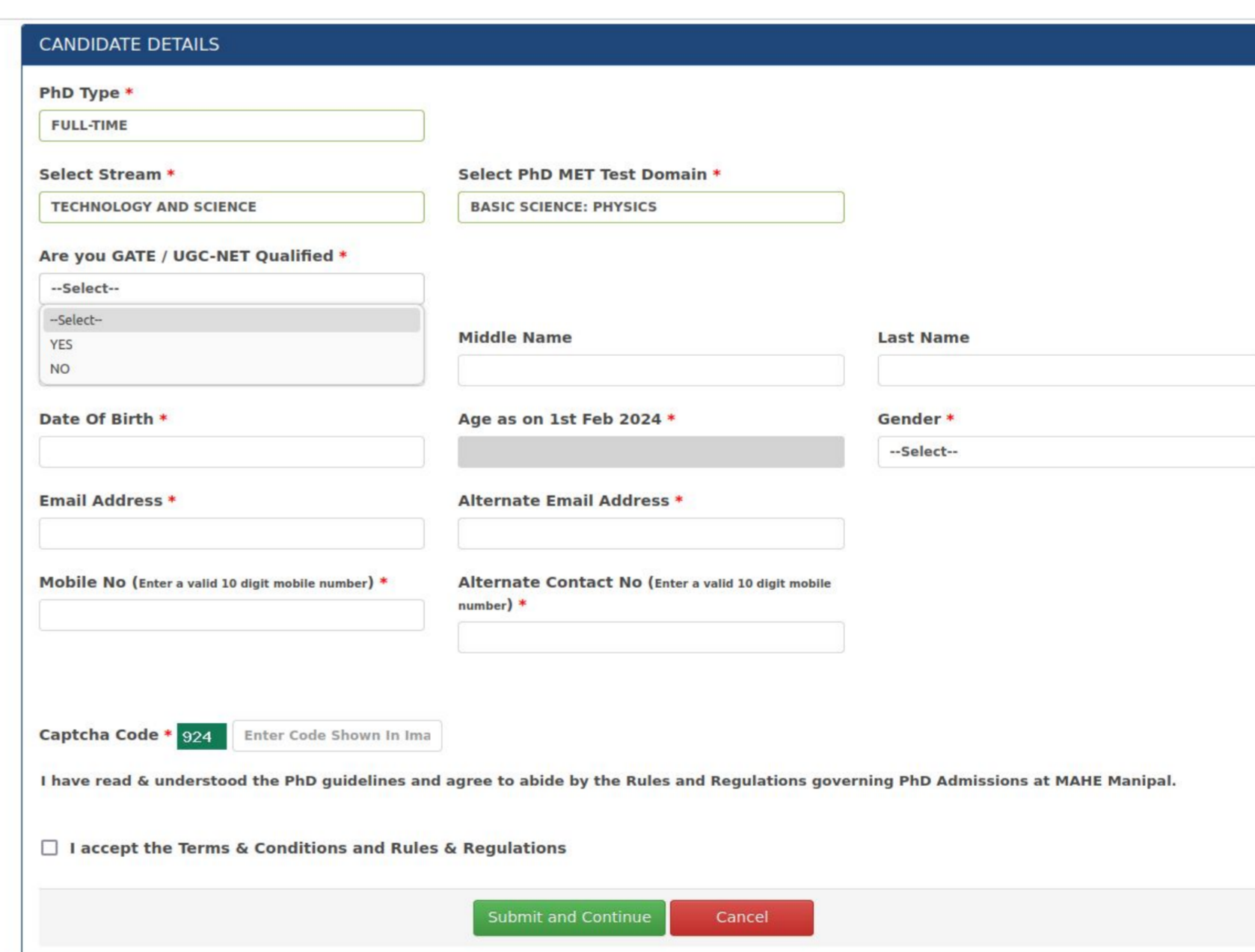


This screenshot is similar to the previous one but highlights the "Register (New Candidate)" button in the "FOR PHD APPLICANTS" section with a red circle and an arrow. The rest of the page content, including the eligibility criteria and timeline, remains the same.

All candidates (except GATE/UGC-NET qualified) are required to qualify the PhD Manipal Entrance Test (MET) in Basic Sciences (Physics/Chemistry).

Filling the Registration Form

- PhD Type – Full Time
- Select Stream – Technology and Science
- Select PhD MET Test Domain – **Basic Sciences (Physics/Chemistry)**



The screenshot shows the "CANDIDATE DETAILS" registration form. It includes fields for "PhD Type" (set to FULL-TIME), "Select Stream" (TECHNOLOGY AND SCIENCE), and "Select PhD MET Test Domain" (BASIC SCIENCE: PHYSICS). There are also fields for "Are you GATE / UGC-NET Qualified", "Middle Name", "Last Name", "Date Of Birth", "Age as on 1st Feb 2024", "Gender", "Email Address", "Alternate Email Address", "Mobile No", and "Alternate Contact No". A "Captcha Code" field is present with the code 924. A checkbox for "I accept the Terms & Conditions and Rules & Regulations" is checked. The form ends with "Submit and Continue" and "Cancel" buttons.

After this step, you will be directed to the payments page for completion of the application

You will receive an acknowledgement with application no. for future reference

For further details, please refer to the brochure at:

https://mahephd.azurewebsites.net/files/2023_24_PhD_batch_2_brochure_V2.pdf



For further queries, please contact the MCNS office:

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Research Webpage :

<https://manipal.edu/mcns-manipal/research/research-list.html>