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Ministero
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Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



Freie Universität Bozen
Libera Università di Bolzano
Università Lìdia de Bulsan

Faculty of Design and Art

PhD Course in

Experimental Research Through Design, Art and Technologies

Duration: 3 years

Academic year: 2024/2025

Course start date: 01.11.2024

Course language: English

Course website: <https://www.unibz.it/en/faculties/design-and-art/phd-experimental-research-design-art-technologies>

COURSE PROGRAMME

This transdisciplinary doctoral programme, which brings together professors from different faculties of the Free University of Bozen-Bolzano (Design and Art, Engineering, Education and Economics and Management) and nationally and internationally renowned professors on the PhD committee, addresses the multiple contemporary and global crisis.

In the proposed model, interdisciplinary dialogue and collaboration provide speculative, critical and pragmatic spaces for reflecting on issues, not only for offering potential solutions, but also for opening up new conceptual perspectives inspired by design culture and artistic production. By integrating complex design, scientific, social and humanistic knowledge, the PhD aims to train a new generation of researchers capable of grasping the opportunities offered by the convergence of design, art, social sciences and humanities and technologies in a post-disciplinary perspective.

The programme requires the ability to establish collaborative relationships with *human, non-human and more-than-human* actors through intercultural methods, learning from others, embracing cultural relativism and experimenting with new research tools and practices.

In this context, the cross-cultural approach of design and art promotes confrontation and interaction between technologies, social-humanistic, educational and economic disciplines.

The PhD addresses multiple global challenges by inviting students to investigate environmental, social, political and cultural issues, through transdisciplinary research and the development of alternative, experimental, critical and exploratory models to generate new knowledge, promote eco-social transformation, social and environmental justice, sustainability, diversity, questioning the potentials and limitations of technological developments and implementations. In this way, design and artistic practices may respond to the rapid advances in artificial intelligence, smart fabrication, data-driven technologies and human-computer interaction by sharing a common reflection on social models and cultural practices in the light of ethical, inclusive, culturally sensitive and sustainable principles.

Within this conceptual framework, PhD students from different educational and cultural backgrounds adopt an alternative and integrated approach that challenges established conventions, embraces creative experimentation and encourages cross-pollination between different disciplinary, theoretical, methodological and practical perspectives. PhD students are encouraged to constructively address societal challenges through collaborative engagement, methodological pluralism and a willingness to

rethink and redefine disciplinary boundaries. The course provides those with arts and humanities backgrounds with basic technological skills, those with science and technology backgrounds with new methodological approaches that integrate design and artistic practice, the ethnographic gaze and critical reflection.

Doctoral projects can be oriented towards the following themes and research areas based on Design and Art, Information Engineering, Socio-Economic Sciences and Education:

Proposed research titles/themes*	Contact person
1. Human Creativity and Stochastic algorithms: Exploring new forms of Art	Prof. A. De Angeli (ING)
2. Promoting sustainable behavior: awareness, information and knowledge	Prof. A. De Angeli (ING)
3. Phygital design in Cultural / Intangible / Landscape Heritage and experience	Prof. R. Gennari (ING)
4. Multimodal Intelligent Interactions	Prof. R. Gennari (ING)
5. Dialoguing Species More-than-human ethnography	Prof. E. Tauber (DES)
6. Simulation of smart materials and devices	Prof. P. Lugli (ING)
7. Design, fabrication and characterization of smart devices	Prof. P. Lugli (ING)
8. Designing Embodied Human-Data IntraActions	Prof. S. Ugur Yavuz (DES)

* This is a partial list of the projects available; other topics related to the research activities of the members of the Scientific Committee may be proposed and discussed by the candidates in accordance with the programme.

The research areas of the PhD Programme also include the following topics which refer both to consolidated inter- and transdisciplinary research projects and to the profiles of individual members of the Scientific Committee:

- Critical re-definition of technology in the expanded field of contemporary culture
- Art and design production in the post-digital era
- Post-humanism in art and design
- Multispecies ethnography in design, art and technologies
- Socio-cultural anthropology for design, art and technologies
- Education in art and cultural heritage through digital technologies
- Intelligent technologies, society and education
- Design for Cultural / Intangible / Landscape Heritage
- Phygital (physical and digital) design and Interaction
- Design, fabrication and characterization of smart materials and electronic components



- Interaction design and smart materials
- Future of Interaction design and transmedia communication
- Critical and Sustainable Human-Computer Interaction
- Democratization of technology
- Diversity and social justice in/with technologies
- Multi-disciplinary methodologies for territories and policy making
- Design for gender equity and inclusion
- Circular Economy and Bio-Based Material Cycles
- Sustainable DIY Materials and Practices
- Biodesign with Microorganisms and Living Systems

The PhD programme is based on the following learning activities. Students are required to

- Develop and implement an individual research plan over the three-year period under the supervision of a supervisor and co-supervisor.
- Present the results of their research at one or more international conferences in the form of an oral or poster presentation. These results must be published as conference proceedings, an article or an essay.
- Carry out research activities abroad for at least three months.
- Attend compulsory courses, seminars and/or summer/winter/spring schools and practice-based transdisciplinary workshops that broaden their knowledge and improve their skills on topics related to the doctoral thesis.

In order to obtain ECTS, students must pass examinations or achieve positive results in the final assessments of the various courses, seminars or selected activities previously approved by the committee of Professors.

To be admitted to the final examination, students must have published at least one article in an international, indexed or ANVUR-listed journal in the relative scientific discipline, or an essay in a peer-reviewed volume or conference proceedings as author or main author. Alternatively, they have to organise international events with related scientific publications or other dissemination activities, including experimental ones, subject to assessment and approval by the committee of Professors.

Please note that the programme is full-time only and students are expected to devote themselves to the completion of their doctoral project throughout the duration of the programme.

Structure of the Ph.D. programme

Students are supervised by a supervisor and a co-supervisor.

In the first year, in parallel with the acquisition of knowledge in the field of human-centered, design- and art-driven research methods, students will be involved in seminar activities to understand the processes of research including ethical, gender and privacy aspects, as well as bibliometric and non-bibliometric evaluation systems of the different subject areas. An essential aspect of the training activity will be the acquisition of technical-operational skills through the use of laboratories and field research, in a practice-based and hands-on learning approach, in addition to basic theoretical knowledge.

From the second year, students will spend a period abroad (minimum 3 months up to a maximum of 12 months) at another university and/or research laboratory, company, cultural institution, and will participate/co-organize transdisciplinary research workshops promoted by the Doctoral Programme.

The third year is dedicated to the finalization of the research project, design-artistic activities, prototypes in the case of practical and technological projects, or the theoretical-critical framework in the case of speculative projects, and the writing of the thesis, as well as the completion of dissemination activities. At the end of each year, the doctoral students must present their activities, projects and results to a committee or the PhD committee, which examines and evaluates the individual work, makes recommendations and approves progression to the following year.

Students will have the opportunity to further develop their ability to communicate ideas and results clearly and effectively (both orally and in writing) and to work in groups. The thesis must be written in English. The PhD programme includes lectures and research activities that take place at the Free University of Bozen-Bolzano, accompanied by experiences that can be carried out at other universities, in Italy and abroad. Each PhD student must spend at least 3 months (and up to a maximum of 12 months if required by law) abroad to carry out part of his/her research.

Admission requirements

Degrees from the old Italian system: all

Master (laurea specialistica/magistrale): all

Foreign degrees

Candidates who have obtained a foreign degree must have a university level education of at least five years and the following prerequisites.

Candidates will be selected on the basis of:

- curriculum vitae and presented titles
- A research project proposal
- an interview to discuss the project.

English language skills will be assessed during the interview.

The profile of the candidates will be evaluated on the basis of quality and potential synergy with the transdisciplinary and research areas of the PhD programme.

The application for admission to the PhD programme must include:

- Curriculum Vitae (CV) (in English, highlighting for each reported activity, dates, and individual contribution). The CV can include, if available, a portfolio of up to 3 projects from the last 5 years and/or up to 3 essays or papers published in the last 5 years.
- Degree certificate (Master's, Specialist or Old Regulation degree or equivalent obtained abroad) stating the final grade. If the candidate has not yet obtained the degree but expects to do so before the date of enrolment, he/she must provide a certificate showing the marks obtained in each examination.
- A research project proposal (in English) containing: a) a letter of motivation for participating in this doctoral programme (max. 1 page); b) a report illustrating the research project proposal (max. 5 pages); c) if available, letters of reference (max. 2).

If the certificates or diplomas were awarded by Italian public bodies, the relevant self-certification forms must be completed in the portal.

If the certificates or diplomas were awarded by foreign bodies, the certificates or diplomas must be uploaded to the portal.

The selection procedure is as follows:

- Applications that meet the basic eligibility requirements will be evaluated by the Evaluation Committee, which will take into account: the CV, the project proposal and the match between the applicant's profile/interests and the research areas of the PhD programme. The Evaluation Committee will then draw up a list of candidates to be invited to the interview.
- Selected candidates will be invited to discuss their project proposal, motivation and prove their ability to communicate in English. The interview will be conducted by video-conference. The evaluation committee will rank the candidates on the basis of a comparative evaluation.

Externally Funded Scholarships

In the case of externally funded scholarships, the applicant must explicitly mention the project and, if interested, the application in the letter of motivation.

Separate ranking lists may be drawn up for such scholarships. In any case, these ranking lists will include the applicants and candidates who have been placed on the general merit list and whose curriculum vitae is particularly relevant to the specified topic.

The final ranking list will be published on the unibz website www.unibz.it.

Examination dates:

Date: 24 and 25 July 2024 (depending on the number of applications)

Location: via Microsoft TEAMS videoconference.

Positions and scholarships:

Total number of positions: 9

Positions with university scholarships: 4

Positions without scholarship: 2

Positions ex DM 630: 2

Positions financed by third parties: 1

1 scholarship co-funded by the Bruno Kessler Foundation with a tied research theme and a minimum of 6 months abroad and a minimum of 6 months in the Foundation in accordance with DM 630/2024 under the PNRR:

Research Topic: Material characterization of the development of advanced SiC-based sensors

Requirements: Basic knowledge of material physics and/or electronics; experience with analytical techniques.

1 scholarship co-funded by *Associazione Albero Blu* with a tied research topic and minimum 6 months abroad and minimum 6 months in the Association in accordance with DM 630/2024 under the PNRR:

Research Topic: Inclusive Digital Education

Requirements: The position is open to graduates of all master's degrees (including Psychology, Computer Science, Information Engineering, Education and Design). The essential requirement is the ability to manage interdisciplinary projects and a willingness to acquire the necessary knowledge for a holistic understanding of the project.



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1 scholarship with tied research topic funded by the Bruno Kessler Foundation and a 6 months stay in the Foundation:

Research Topic: Numerical simulation to explore distinctive SiC features for the development of cutting-edge devices

Requirements: basic knowledge of material physics and/or electronics; programming experience.

In accordance with Ministerial Decree 226/2021, the activation of the doctoral programmes is subject to accreditation and to verification by ANVUR of compliance with the accreditation requirements. Therefore, the winners will only be able to enroll after the positive outcome of this verification.