universidade de aveiro
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STRASCHEG CENTER FOR ENTREPRENEURSHIP

PhD Degree

Doctorate in Business Innovation

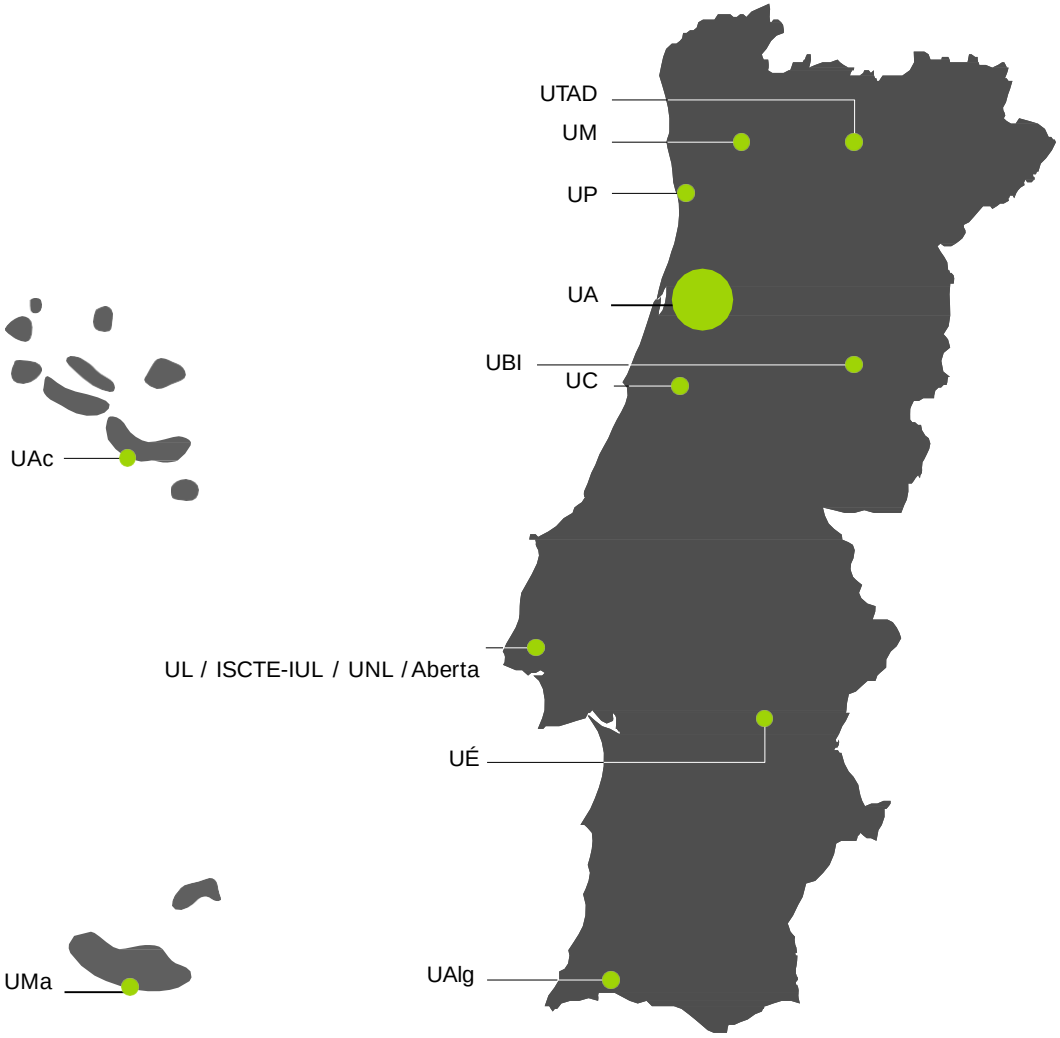
DBI

co-operation
promotion of science
creativity on an amazing campus
booming internationalisation
interdisciplinary instruction
a vast network
a research university

knowledge is created… in companies… with the University of Aveiro
together with the Munich University of Applied Sciences and the Strascheg Center for Entrepreneurship

Universidade de Aveiro (UA)

in the centre region of Portugal



Universidade de Aveiro (UA)

a great sense of community

13675
students
5210 in postgraduate studies

970
academic staff

125
researchers

365
post-doc

970
administrative staff

85
nationalities *(campus)*

488000
11500 thesis online

1100
beds

6
canteens

Universidade de Aveiro (UA)

offering innovative courses

youthful (1973),
and a pioneer in the courses offered

telecommunications, integrated teacher training, ceramics engineering, environmental engineering, regional and urban planning, industrial engineering and management, tourism, music... were national innovations

binary system
(2017/2018)

university courses:
1st cycle undergraduate degrees (25),
integrated masters (11),
2nd cycle masters (61) and
PhD programmes (51)

polytechnic degrees:
1st cycle undergraduate degrees (19) and
2nd cycle masters (6)

non-degree courses:
advanced training courses (1) and
higher professional training courses (14)

Universidade de Aveiro (UA)

with a unique structure

no faculties

16 Departments

engineering
- electronics, telecommunications and informatics
- environment and planning
- materials and ceramics
- mechanical engineering
- civil engineering

arts and humanities
- languages and cultures
- communication and art
- education and psychology

sciences
- chemistry
- mathematics
- geosciences
- physics
- biology

social sciences
- social, political and territorial sciences
- economics, management, industrial engineering and tourism

health
- medical sciences

4 Polytechnic schools (since 1997)

- Águeda school of technology and management
- Health school
- Aveiro school of accountancy and administration
- School of design, management and production technologies

22 research units, mainly inter depart-mental

CESAM – Centre for Environmental and Marine Studies
CICECO – Aveiro Institute of Materials
I3N-FSCOSD – Institute for Nanostructures, Nanomodelling and Nanofabrication – Physics of Semiconductors, Optoelectronics and Disordered Systems
IT – Telecommunications Institute
IBIMED – Institute of Biomedicine of Aveiro
CIC.DIGITAL – Centre for Research in Communication, Information and Digital Culture
CIDTFF – Research Centre for Didactics and Technology in Teacher Education
CIDMA – Centre of Research and Development in Mathematics and Applications
CINTESIS – Center for Health technology and Services Research
CIPES – Center for Research in Higher Education Policies
CLLC – Centre for Languages, Literature and Cultures
DigiMedia – Digital Media and Interaction
GEOBIOTEC – GeoBioSciences, GeoTechnologies and GeoEngineering
GOVCOPP – Governance, Competitiveness and Public Policies
ID+ – Research Institute for Design, Media and Culture
IEETA – Institute of Electronics and Informatics Engineering of Aveiro
INET-MD – Institute of Ethnomusicology - Centre of Music and Dance Studies
QOPNA – Organic Chemistry, Natural and Agro-foods Products
REQUIMTE – Associated Laboratory for Green Chemistry – Clean Technologies and Processes
RISCO – Aveiro Research Centre of Risks and Sustainability in Construction
TEMA – Centre for Mechanical Technology and Automation
WJCR – William James Center for Research

DBI Doctorate in Business Innovation

in collaboration with SCE/MUAS within the DBI

HM Hochschule München University of Applied Sciences

UA has a strong collaboration with SCE/Munich University of Applied Sciences (within the DBI)

The Strascheg Center for Entrepreneurship (SCE) acts as a focal point for Munich University of Applied Sciences' (MUAS) enterprise and knowledge exchange activities.

STRASCHEG CENTER FOR ENTREPRENEURSHIP

SCE goal is to nurture entrepreneurial thinking and action through education and business start-up support measures. The range of education and research programmes combine practical knowledge and personal development in an interdisciplinary setting. The programmes focus on innovation as well as corporate and social development.

SCE promotes learning in live entrepreneurial settings that enhances effectuation skills. SCE take a process-oriented approach to entrepreneurship, by either starting with a precise idea or a set of personal competences, skills and resources. Scientific results will be directly linked to practical application.

Munich University

multifaceted and practice-oriented

14
departments

18400
students

463
professors

750
part-time lectures

Munich University of Applied Sciences is the second largest university of applied sciences in Germany

85
bachelors and masters degree programs

780
staff members and researchers

SCE
is the entrepreneur-ship-center of MUAS

why **DBI**?

DBI Doctorate in Business Innovation

Doctorates in the companies may enhance specific processes and help rethink the existing ones, due to:

· Advanced methodologies
· Innovative attitude
· Questioning of existing processes
· Thinking “out of the box”

The DBI program equals the classic PhD, but is enhanced in:

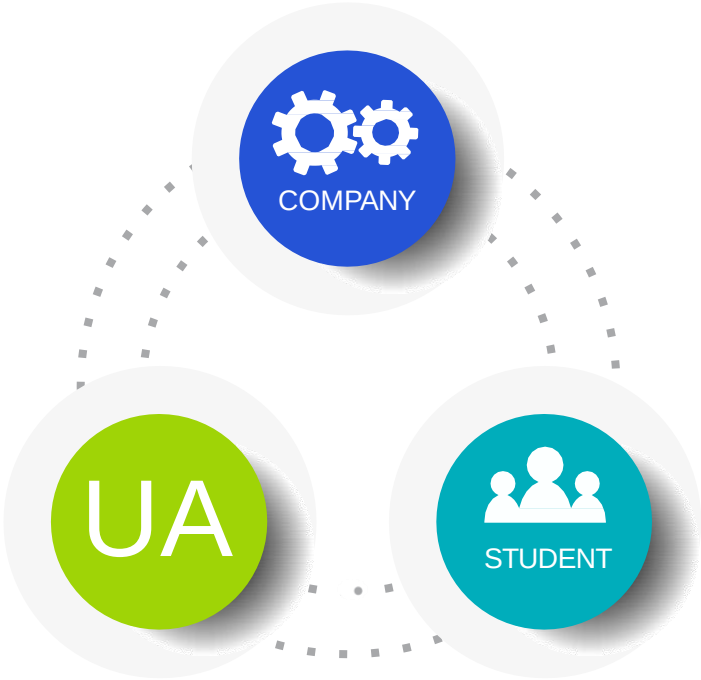
· Flexibility
· Adaptation to senior executives at work
· Focus on applied results and personalized objectives
· Business and innovation

study cycle’s generic objectives

DBI Doctorate in Business Innovation

DBI results from a large number of companies’ requests and the willingness of the University of Aveiro to offer postgraduate training at PhD level in a business context/environment, that can solve problems and reinvent the complex and multidisciplinary processes of companies.

DBI's mission is to train the best innovation professionals in their different business applications, promote quality research with international impact and provide the industry with the best tools to improve its competitiveness on a global scale.



study cycle’s generic objectives

DBI is a flexible, context-adaptive business program.

focused on applied results and personalized goals, dedicated to innovation (both in technical and/or business).

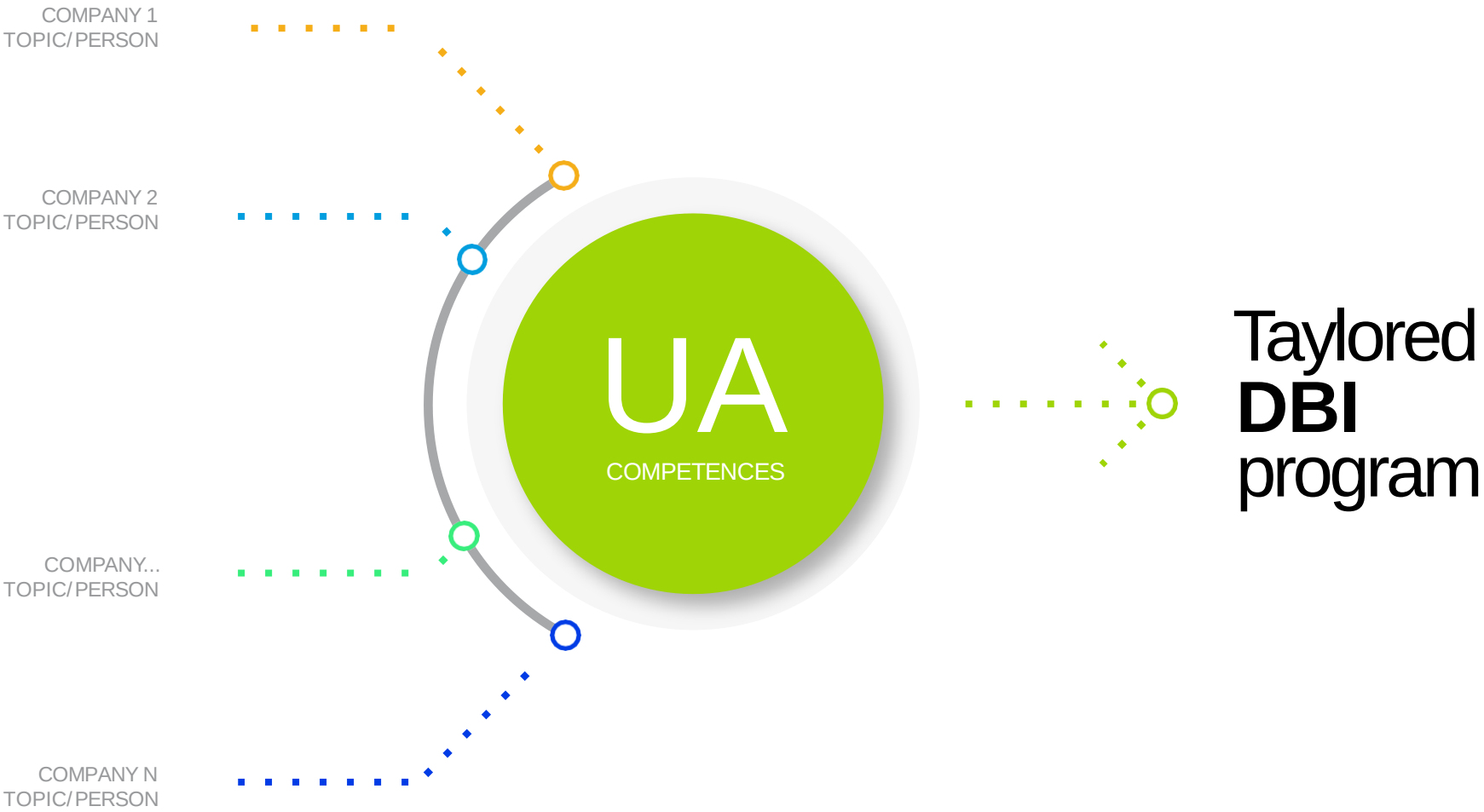
DBI promotes learning in a business environment, enhancing effective student skills.

learning outcomes

DBI Doctorate in Business Innovation

- Acquire scientific knowledge in business innovation, oriented to certain fields of application;
- Design and conduct innovative research in a business environment, from the bibliographic research, planning and application of scientific research methods to the critical analysis of results;
- Be able to respond to emerging challenges, in complex and interdisciplinary business contexts, apply advanced methodologies for analysis and development of innovative proposals focused on business and technical competitiveness;
- Develop a critical attitude and out-of-box thinking in the design and development of new products, processes and technologies;
- Be able to communicate with peers, stakeholders, the academic community and society, about the topics in their area of expertise, using the resources suitable to the context and target audience;
- Be able to work within multidisciplinary teams, use empathy and harmony to work within multidisciplinary teams, respect the codes of ethics and professional conduct, all in favor of eco-efficiency and societal challenges.

how does **DBI** work?



how does **DBI** work?

01 The UA/SCE annually opens the call (during April)

02 The company identifies the topics, the processes and the persons to be engaged

03 The company proposes a topic and person and if possible a company supervisor

04 The UA/SCE gives a general overview on the topic and helps identify the supervision team and the host research unit(s) at the UA

05 The UA/SCE promotes a personalised meeting between the candidates and the supervision team

06 through the scientific supervisor and related actors the UA/SCE will produce a personalised plan for the first year and remaining years of the work

access requirements for **DBI**

In order to access the Doctoral Programme, the candidate

must satisfy the conditions laid down in national legislation, with regard to the specific norms applied and, in particular, must respect at least one of the alternatives given below:

- Must hold a Masters degree or a 2nd cycle course of higher education, or
- Possess a Higher Education degree, obtained in a Portuguese or foreign institution, which has been recognized as appropriate by the Scientific Council of the University of Aveiro, or
- Possess an academic, scholarly or professional curriculum which is especially relevant and recognized as such by the Scientific Council of the University of Aveiro.

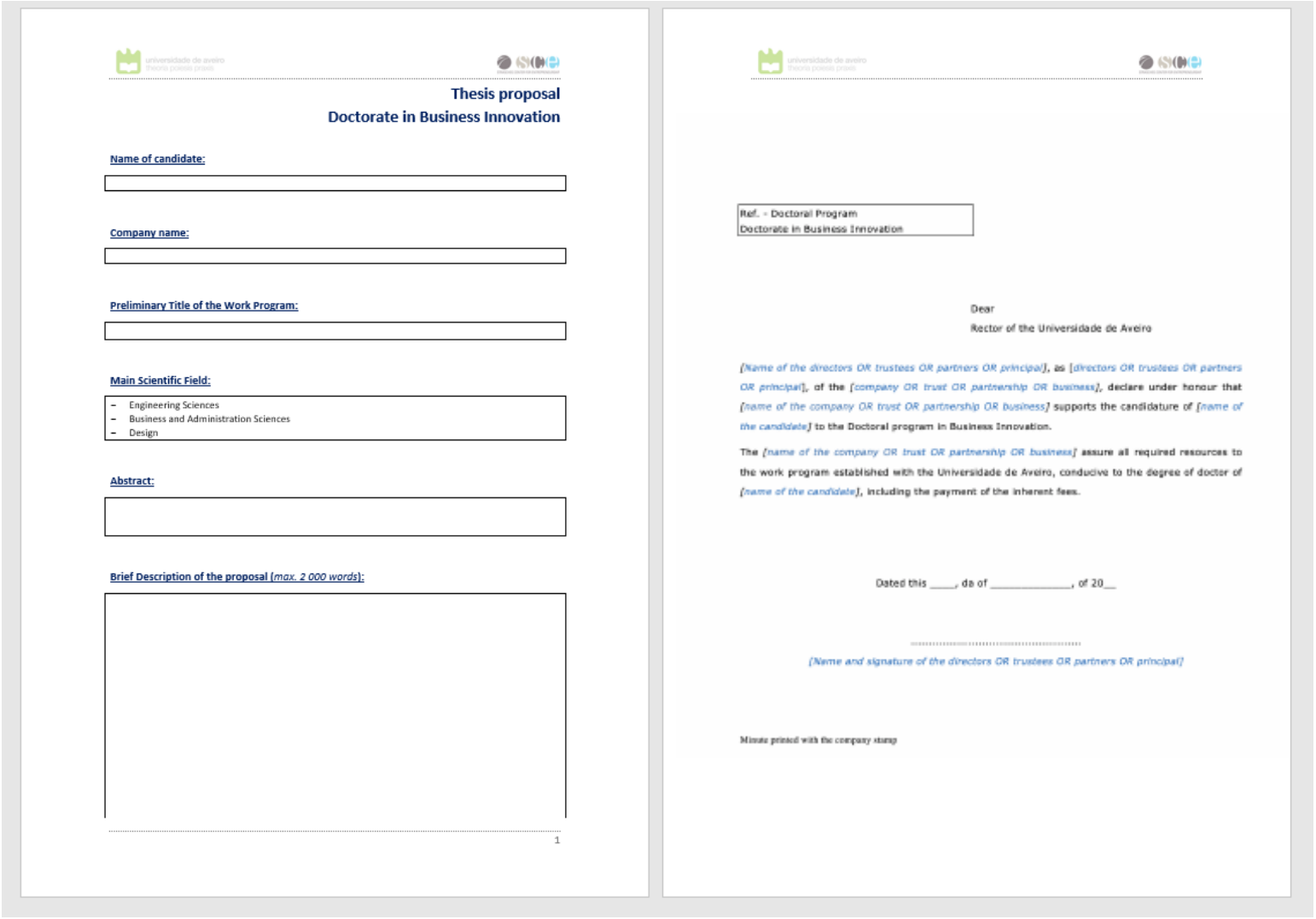
Additionally, the candidates must have

- The official and formal support of a company, demonstrating the utility of the thesis work.
- A thesis proposal.

The previous conditions must be satisfied through the use of the adequate templates provided by DBI services.

Templates for **DBI** candidature

Adequate templates are available in the **DBI** services



Thesis proposal
Doctorate in Business Innovation

Name of candidate:

Company name:

Preliminary Title of the Work Program:

Main Scientific Field:

- Engineering Sciences
- Business and Administration Sciences
- Design

Abstract:

Brief Description of the proposal *(max. 2 000 words)*:

1

Ref. - Doctoral Program
Doctorate in Business Innovation

Dear
Rector of the Universidade de Aveiro

[Name of the directors OR trustees OR partners OR principal], as *[directors OR trustees OR partners OR principal]*, of the *[company OR trust OR partnership OR business]*, declare under honour that *[name of the company OR trust OR partnership OR business]* supports the candidature of *[name of the candidate]* to the Doctoral program in Business Innovation.

The *[name of the company OR trust OR partnership OR business]* assure all required resources to the work program established with the Universidade de Aveiro, conducive to the degree of doctor of *[name of the candidate]*, including the payment of the inherent fees.

Dated this ____, da of _____, of 20__

.....

[Name and signature of the directors OR trustees OR partners OR principal]

Minute printed with the company stamp

location where the **DBI** will be delivered

DBI will

- be provided in a business environment;
- provide supervisors that meet with the student in the company/industry;
- require the attendance of the **DBI** week, that takes place at UA, with learning modules, workshops, seminars, presentations,…
- have students making regular presentations (public or restricted) during the **DBI** (e.g. Thesis preparation and planning) in UA;
- have all discussion and documents in English;
- provide PhD students with advanced innovation training to be applied in a business environment;
- enable a match between the training provided by the course and the initial training of doctoral students through the areas of expertise to be developed in the thesis;
- encourage specialized innovation training that values and promotes dialogue. It will foster a strong collaborative attitude among all those involved in the course as well as with other partners that may be added.
- offer an optional science and innovation training at SCE in Munich in year 2 and 3.

block diagram of the **DBI** Program

DBI week

1st

Topic specific method/subjects

(Technical challenges selected by the student/supervisor)

(optional)

Business innovation strategy course

Seminars

(Technical and/or business innovation)

Thesis preparation and planning (1st Sem.)

Thesis (2nd Sem.)

2nd

Business Innovation Seminars

(optional science and innovation training at SCE Munich, Germany, milestone: empiric study)

Thesis work

3rd

Complementary skills

(optional global exposure)

Thesis work

block diagram of the **DBI** Program (special weeks)

1st

1st immersive week in

October

- Start DBI
- Students reception
- Tutor matchmaking
- Seminars/workshops
- Social dinner (with the rector, alumni, etc)

2nd immersive week in

March

- Seminars/workshops, …
- Student presentations (for the UC *"Thesis preparation and planning"*)
- Business innovation strategy course

3rd immersive week in

July

- UA Research Summit (students participation)

2nd

Thesis work

3rd

Thesis work

DBI › profile matching

Doctorate in Business Innovation

- advanced materials and processing
- applied mathematics
- biochemistry
- biology
- biology and ecology of global changes
- biomedicine
- biorefineries
- biotechnology
- business and economics
- chemical engineering
- chemistry
- civil engineering
- computer engineering
- computer science
- design
- electrical engineering
- energy systems and climate change
- environmental sciences and engineering
- food science and technology and nutrition
- geosciences
- gerontology and geriatrics
- history of sciences and scientific education
- industrial engineering and management
- information and communication in digital platforms
- marine science, technology and management
- marine sciences
- marketing and strategy
- materials science and engineering
- mathematics
- mathematics and applications
- mechanical engineering
- multimedia in education
- music
- nanosciences and nanotechnology
- physical engineering
- physics
- political science
- public policies
- refining, petrochemical and chemical engineering
- science and technology of polymers
- sustainable chemistry
- telecommunications
- territory, risk and public policies
- tourism

others…

DBI › workplan examples

Doctorate in Business Innovation

Title: Financial interval time series modelling using machine learning and hybrid real-time algorithms

Financial interval time series (ITS) describe the evolution of the high and low prices of an asset throughout time. Their accurate forecasts play a key role in risk management, derivatives pricing and asset allocation. This demands the development of models able to properly predict these prices. This work evaluates threshold autoregressive models, machine learning algorithms and hybrid classic-deep learning algorithms for financial ITS forecasting as a nonlinear approach for IST. This is considered an empirical application of the main index of three European stock markets. (...)

Title: Algorithms for innovative and cost effective design of automotive parts obtained from additive manufacturing

*Additive Manufacturing (AM) is growing more rapidly than ever and has the potential to revolutionize the way products are designed and manufactured. However, there are significant hurdles to its widespread adoption, particularly in the automotive industry. The thermomechanical behavior of the parts obtained by AM, including its microstructural material properties, is not yet fully characterized and there is no robust optimum design methodologies for automotive parts manufactured by AM. Therefore, the main goal of this PhD proposal is the development of algorithms and their software implementation for the optimum and cost-effective design of metal automotive parts obtained from additive manufacturing. The goal of this PhD will increase the competitiveness of the company *** in the automotive industry. (...)*

Title: Development of forecasting models for assessing technology commercialization success

The work intends to identify the factors affecting the success of technology commercialization and their relative importance in order to develop a forecasting model for assessing technology commercialization. Based on literature review and fuzzy Delphi method, 50 components are identified and classified in four dimensions including (...). Interpretive structural modelling (ISM) will be used (...). In this study, fuzzy Delphi, ISM and ANP methods will be conducted sequentially using opinions of 400 chosen experts working at knowledge based companies active in the commercialization of technologies all over the world. (...)

DBI collaborations

Collaborations from companies

DBI – thoughts of PhD students

Francisco Rodrigues | CEO

PICadvanced

"The vision of PICavanced S.A. is to add value to its talent and PhD/other training programs and to encourage these programs among all human resources. Being a PICadvanced S.A. Innovation start-up, DBI brings not only the desired scientific improvement but also Business and Innovation perspective to the work developed. This helps monetize the education and investment done.
In my personal experience with DBI, I was trained in not only the development of hard skills but also soft skills. Coming from a technology scientific field, business perspectives and methodologies are not covered in the daily literature. In this way, DBI brings a new layer of knowledge to any "traditional" PhD program."

"The DBI PHD Program is an excellent opportunity for visionary companies to introduce innovation, deep into their business process, answering to specific pain points and roadblocks to solve.
It was designed to allow full time workers, like me, to attend.
It has collaboration and flexibility as key pillars for a common understanding between: Scientific academic world, the companies and the collaborator, that is indeed also: a student; an innovator facilitator; a researcher strengthening the gap between business needs and R&D initiatives.
The immersion weeks are insightfull moments for learning skills, improve work done and sharing with other DBI students and supervisors.
An excellent general overview of PhD subjects ongoing."

Miguel TEIXEIRA
Digital Transformation Responsible Europe

GROUPE RENAULT

Miguel Teixeira, Groupe Renault in discussion with Michael Hack, SCE

DBI › tuiton fees

The tuiton fees

8.500,00€ p.a DBI + registration fees (20€)
Payment by the company

Options*

Part/Full time. Each year, every candidate must define the profile they wish to choose.

· Part time: one full year at half time dedication. (6 years)
· Full time**: one full year at full time dedication. (3 years)

* The tuition fees are adapted in accordance to the dedication.
** default. In a business environment, the standard is the full time dedication.

Number of new students/year: 10 (max. 15)

DBI › industrial properties/patents

01 · If innovative products or processes, which are subject to protection by the Industrial Property legislation (patent, utility model, design patent registration), arise from the DBI works, in which its supervision is involved, the property of the respective rights will be assigned jointly.

02 · The rights granted to the University shall not prejudice the right of inventors (student/company, …), to be designated as creator or inventor in the application for protection of invention or industrial creation.

03 · Any financial benefits obtained from the exploitation of the rights referred to in the previous numbers shall be shared among the parties, in percentages to be agreed.

04 · If the companies from which the DBI students originate require to be holders of all intellectual or industrial property rights developed by the DBI students, this option shall be defined in the DBI application as an agreement, modifying nº. 1-3.

05 · The option defined in nº. 4 takes place with a payment of an upfront fee of 10.000,00 €. The company can also exercise this option at a later period, always before the defense of the PHD thesis, through the payment of a final instalment of 25.000,00 €. These values can be updated by UA before the start of the academic year and only for new students.

06 · The possibility of the first and second parties using DBI data or conclusions for strictly academic or scientific purposes is safeguarded.

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STRASCHEG CENTER FOR ENTREPRENEURSHIP

Hochschule München University of Applied Sciences

DBI

2020/2021

The University of Aveiro as a network of instruction and innovation, the forerunner and driving force behind regional development, and the creation of wealth

For more information, please contact the DBI team:

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