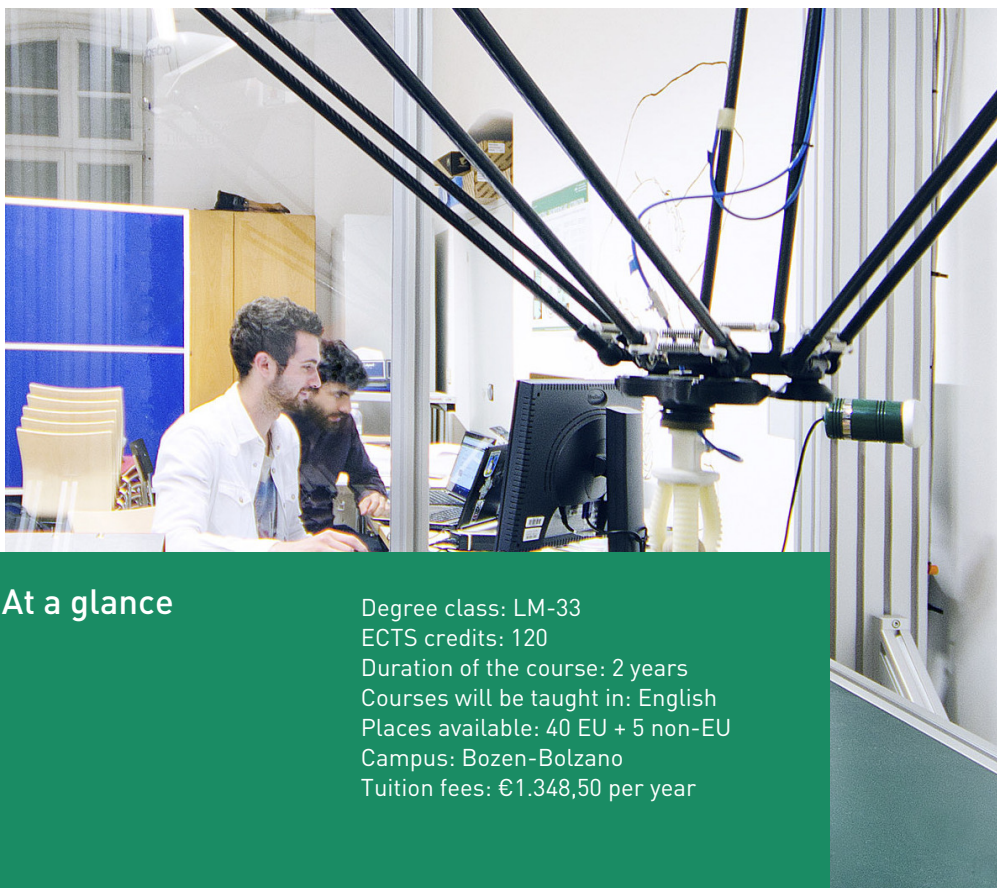




Fakultät für Naturwissenschaften und Technik  
Facoltà di Scienze e Tecnologia  
Faculty of Science and Technology

# Master in Industrial Mechanical Engineering



## At a glance

Degree class: LM-33  
ECTS credits: 120  
Duration of the course: 2 years  
Courses will be taught in: English  
Places available: 40 EU + 5 non-EU  
Campus: Bozen-Bolzano  
Tuition fees: €1.348,50 per year



## Course description

This programme trains engineers to be successful working in interdisciplinary areas of engineering, including mechanical design, mechatronics, automation, engineering management and logistics. Particular attention is devoted to the latest engineering technologies and developments, including computational engineering mechanics, smart manufacturing and Industry 4.0.

Students choose between two specializations Mechanics and Automation or Logistics and Production. The first is offered entirely in Bozen-Bolzano and is characterised by a strong connection with local companies. The latter is offered as a double degree with the Otto von Guericke University Magdeburg (OVGU, Germany) where students spend one to two semesters and earn also the OVGU Master of Science degree in "Wirtschaftsingenieur Logistik".

This programme is grounded in South Tyrol while maintaining a strong international outlook. This is guaranteed by being taught entirely in English with teaching staff as well as students coming from South Tyrol, Italy, Europe and the entire world.

Courses combine theory and engineering practice. Laboratory activities are seamlessly integrated into the programme's activities and students have access to state-of-the-art equipment and technology in the Smart Mini Factory and the Mechanical Lab, among others. Courses are taught by leading research professors of unibz, supported by experts from relevant industries. Formal teaching is augmented with excursions to trade fairs as well as local, regional and international companies.

The master is offered as a full-time programme, though an increasing number of students are employed by local South Tyrolean companies during their studies.

Upon graduation, students can take the Italian state examination for the profession of Ingegnere Industriale Senior ("Senior Industrial and Mechanical Engineer") and after passing such examination to join the Ordine degli Ingegneri ("Italian Chamber of Engineers") - Section B.

## Structure of the course

This English-language master program is structured over two years, with two semesters per year. The first year provides the students the fundamental master-level industrial mechanical engineering knowledge. This combines traditional mechanical engineering subjects, including contents in computational mechanical design and digital manufacturing, with management engineering and automation courses including contents in project, process and technology management as well as robotics and drives.

The third semester is devoted to the deepening the students' knowledge in the subjects of the selected specialization. The fourth and final semester is dedicated to the research and writing of the master thesis. During this year, students customize their study plan by selecting elective courses of up to 15 ECTS credit points.

In the course offering you can find the course descriptions:

# Study Plan - Master in Industrial Mechanical Engineering - Major in Mechanics and Automation

## 1st Year

- 0 CP Project, Process and Technology Management
  - 5 CP Module I: Project Management
  - 5 CP Module II: Process and Technology Management
- 5 CP Advanced Manufacturing Technologies and Systems
- 5 CP Reverse Engineering and Rapid Prototyping
- 5 CP Automatic Control
- 0 CP Industrial Automation and Mechatronics
  - 5 CP Module I: Mechatronics and Robotics
  - 5 CP Module II: Electric Drives and Machines
- 0 CP Planning and Simulation of Production and Logistics Systems
  - 5 CP Module I: Planning of Logistics Systems
  - 5 CP Module II: Simulation in Production and Logistics
- 0 CP Advanced Topics on Machine Design I
  - 0 CP Module I: Materials Behaviour and Machine Elements

## 2nd Year

- 0 CP Advanced Topics on Machine Design II
  - 10 CP Module II: Finite Element Method (FEM)
- 5 CP Mechanical Vibrations
- 5 CP Industrial Accounting
- 5 CP Study Project (Individual or Team) - Laboratory in Mechanics/Automation
- 5 CP 1 Course to Select from the List of Characterizing Sectors\*\*
- 15 CP Free choice courses\*\*\*
- 30 CP Thesis

### \*\* Courses of the Characterizing Sector

- 5 CP Hydraulic and Pneumatic Automation Technologies
- 5 CP Fundamentals of Thermo-Fluid-Dynamics
- 5 CP Functional Mechanical Design for Energy Efficiency

### \*\*\* Free choice courses

Students can choose courses of their choice. Every year the Faculty publishes the list of free choice courses offered.

# Study Plan - Major in Logistics and Production (Double Degree Programme with the Otto-von-Guericke-Universität Magdeburg)

## 1st Year (unibz, Bolzano-Bozen)

- 0 CP Project, Process and Technology Management
  - 5 CP Module I: Project Management
  - 5 CP Module II: Process and Technology Management
- 5 CP Advanced Manufacturing Technologies and Systems
- 5 CP Reverse Engineering and Rapid Prototyping
- 10 CP Industrial Accounting and Management
- 0 CP Planning and Simulation of Production and Logistics Systems
  - 5 CP Module I: Design and Planning of Logistics Systems
  - 5 CP Module II: Simulation in Production and Logistics
- 0 CP Industrial Automation and Mechatronics
  - 5 CP Module I: Mechatronics and Robotics
  - 5 CP Module II: Electric Drives and Machines
- 5 CP Purchasing and Supply Management
- 15 CP Free choice courses\*

## 2nd Year (OvGU, Magdeburg)

- 5 CP Logistic Strategies and Methods (offered at OvGU Magdeburg)
- 5 CP Supply Chain Practice / ERP (offered at OvGU Magdeburg)
- 5 CP Business Decision Making (offered at OvGU Magdeburg)
- 5 CP Study Project (Individual or Team) - Laboratory in Mechanics/Automation
- 30 CP Thesis

### \*Free choice courses

Students can choose courses of their choice. Every year the Faculty publishes the list of free choice courses offered. Among these, 5 credits have to be acquired selecting 1 course from the catalogue Logistics Operations “ Faculty of Economics” at the OvGU. The catalogue will be yearly updated and it is visible at the Faculty website of OvGU.

Students have the option of carrying out their master thesis in house at unibz or in cooperation with local and international industry. Previous theses have been carried out at companies and research centers such as BMW, 3M, Intercable, Progress, Leitner and Fraunhofer Italia.

Both curricula foresee a study project (term project) in the third semester. This project allows students to implement the theory and knowledge acquired. Study projects are individual or

team projects and are carried out at unibz or companies. It is also possible to couple the study project with an internship. More specific information can be found in the syllabus.

## Exchange programmes and internships

This master program has agreements for exchange programmes with the Technical University of Munich (Germany), Brno University of Technology (Czech Republic), University of Ljubljana (Slovenia) and Chiang Mai University (Thailand). Beyond this, the Free Mover programme of the unibz opens the door to universities all over the world!

The Logistics and Production specialization allows students to spend one to two semesters at the Otto von Guericke University Magdeburg (Germany). This allows them to obtain a degree from each institution. Funding for this time abroad is possible via the Erasmus program

## Career opportunities

Our graduates are able to design and analyse mechanical systems and structures, to define and manage the suitable production systems, as well to manage materials procurement, operations and logistics. In doing so, the programme provides students with the tools for a career as an engineer or a consultant. This includes research and development, engineering design, calculation and analysis, manufacturing, automation technology, production systems procurement, production, operations management, internal and external logistics and quality assurance.



## Master in Industrial Mechanical Engineering

### Application and Admission

You can find all you need to know in order to apply and gain admission to this study programme by browsing through the information below.

### Deadlines

#### Early Bird Application

Application: 02/03 - 28/04/2020 (by noon local time)

Language exams: 15 - 22/04/2020 (registration 31/03 - 07/04/2020)

Admission procedure and publication of ranking lists: by 18/05/2020

Payment of the 1st instalment of the tuition fees: by 28/05/2020 (by noon local time)

Enrolment: 15/07 - 16/10/2020 (by noon local time)

#### Late Application

Application: 20/05 - 31/08/2020 (by noon local time)

Language exams: 29/06 - 03/07/2020, if necessary, also on 04/07 or 06/07 (registration 25/05 - 19/06/2020), 28/07/2020 (registration 10/07 - 21/07/2020)

Admission procedure and publication of ranking lists: by 09/09/2020

Payment of the 1st instalment of the tuition fees: by 18/09/2020 (by noon local time)

Enrolment: 09/09 - 16/10/2020 (by noon local time)

#### Preparatory courses and Freshers Days

Freshers Days: 28 - 29/09/2020

#### 1st semester

Classes: 28/09 - 23/12/2020

Exams (extraordinary session): 14 - 23/12/2020

Holidays: 24/12/2020 - 06/01/2021

Classes: 07/01 - 16/01/2021

Exams: 18/01 - 13/02/2021

#### 2nd semester

Classes: 22/02 - 01/04/2021

Holidays: 02/04 - 05/04/2021

Classes: 06/04 - 12/06/2021

Exams (extraordinary session): 17 - 29/05/2021

Exams: 14/06 - 10/07/2021

### **Autumn session**

Exams: 23/08 - 25/09/2021

## **Available Places**

EU citizens and citizens are treated equally

Early Bird Application: 25

Late Application: 15

Non-EU citizens (living abroad)

Early Bird Application: 5

The programme will only be offered if a minimum of 12 newly enrolled students is reached.

## **Entry requirements**

In order to gain admission to this programme you need one of the following qualifications:

- Italian bachelor degree (old or new system)
- University diploma
- Foreign qualification obtained abroad and recognized as suitable

### **Curricular requirements:**

1. The admission requirements are:

- an Italian bachelor degree in the degree class L-9 (Industrial Engineering) ex D.M. 270/2004
- an Italian bachelor degree in the degree class 10 (Industrial Engineering) ex D.M. 509/1999
- an Italian degree in another degree class (old or new system), university diploma or other foreign qualification gained abroad and recognized as suitable

2. In the first two cases mentioned above (1a and 1b), you must also have acquired the number of ECTS credit points needed for the Italian degree Laurea in Ingegneria Industriale (class L-9, DM n. 2359, 16 March 2007):

- Min. 36 ECTS credit points ( ) in the scientific-disciplinary areas of basic subjects.
- Min. 45 ECTS credit points in the scientific-disciplinary areas of the characterizing subjects of industrial mechanical engineering

3. In the third case mentioned above (1c), the Admissions Committee will check the requirements to determine whether the contents and courses attended are equivalent to the disciplinary fields mentioned at point (2). If you have gained a foreign qualification, the number of credit points awarded to scientific disciplinary sectors will be based on the contents of the exams passed.

4. If you do have the necessary curricular requirements you will not be admitted if your average grade in the bachelor (not including the final exam) is lower than 22/30 (Italian system) or 3,0 (German system)



**If you have not yet graduated at the time of application:** you can apply if you have acquired at least 150 ECTS credit points. Until your graduation, you will be admitted conditionally. You must have achieved your degree by the enrolment deadline, otherwise you will be excluded.

To be admitted you must fulfil the language requirements indicated in the section “Language requirements”.

### **Requirements for the Double Degree Programme**

In order to gain access to the Double Degree Programme, you need to certify also:

1. 25 credit points in Science and Computer Science (including at least 15 credit points in Mathematics / Statistics and 5 credit points in Computer science)
2. at least 20 credit points in Engineering (at least 10 credit points in Mechanics and 5 in Construction)
3. at least 10 credit points in Economics
4. at least 25 credit points in Logistics

At the end of the 3rd semester you must have passed the exams of the 1st semester and document at least 10 weeks of internship in the industrial sector.

If you do not fulfil the requirements in time, you will not be able to graduate with the Double Degree.

## **Language requirements**

The official teaching language is English. Therefore, the following language requirements apply, otherwise you will be excluded from the admission procedure:

**Entry level** (to gain admission)

English: B2

The levels of the Common European Framework of Reference apply.

You can demonstrate your language proficiency in the application portal (in the section “upload language certificates” and/or “enrol for language exams”) after you have created an application in the section “create/manage applications”.

- In case your final certificate has been awarded by an **Italian** public institution, you need to submit a self-declaration.
- In case your final certificate has been awarded by a **foreign** public institution, you need to upload diploma scanned copy of the original.

**You can demonstrate language proficiency through:**

1. **the main teaching language in your final high school year** if English (recognised as C1)
2. **a bachelor or master degree** in English (recognised as C1). unibz graduates must upload the language certificates obtained and/or declare that they have passed language exams at the unibz Language Centre (B2, B2+ or C1)
3. **a recognised language certificate** (see the list of recognised certificates) If you cannot upload the certificates, you can send them by e-mail as PDF files or deliver them in person

to the Language Centre by the application deadline (see “Deadlines” section).

4. **language exams organised by the unibz Language Centre.** You can register for these exams online through the application portal (in the section “enrol for language exams”) after you have filled out your application in the section “create/manage applications”. The registration periods are indicated in the “Deadlines” section. If you start your application outside a language exams registration period, you must return to the portal during one of the periods indicated above in order to register for an exam.

Information regarding the structure of the language proficiency exams, their duration, their administration, and typical processing time for the publication of the results can be found on the following webpage: <https://www.unibz.it/en/services/language-centre/language-exams/>.

## Online application

Your application must be submitted online through the Application Portal. The deadlines are indicated in the “Deadlines” section.

- You need to create an account;
- Then fill in the form online and check if the required information is complete;
- Upload the required attachments for every selected study programme in the portal and submit the application by the deadline. Once the application has been sent, it cannot be modified. Filled-in forms which have not been sent correctly will not be taken into consideration.

**Please note:** Mendacious declarations will be criminally prosecuted and will result in the automatic exclusion from the ranking list.

You have to upload:

- a passport-size colour photo;
- a photocopy of a valid identity card or passport (front/back). Please note: if your document is invalid, incomplete or unreadable, you will be excluded from the admission procedure;
- the attachments listed under “Admission procedure”.

If you gained your qualification abroad, you must also upload:

- the diploma of your qualification: if you are not yet in possession of the diploma, you can upload it upon enrolment at the very latest - until you have not uploaded your diploma, you can only gain conditional admission;
- an official translation of the qualification into Italian (not necessary for qualifications in German or English);
- the Diploma supplement, where it must be indicated: that the student has achieved at least 180 credit points (ECTS) and that the study title gives access to a master programme.

In case of doubt, unibz reserves the right to request further documents (e.g. declaration of equivalent value).

- the declaration of equivalent value of your qualification: if you are not yet in possession of the declaration, you can upload it upon enrolment at the very latest (see next paragraph);
- the valid permit to stay for Italy (only for non-EU citizens legally resident in Italy) - see

below chapter "EU-citizens and equivalent" point 2.

### **The declaration of equivalent value (not necessary for qualifications gained in Austria or Germany, but unibz reserves the right to request it in case of doubt)**

If you have a foreign qualification, you must certify that your qualification would grant you admission to a similar study programme in the country where you gained this qualification. For this reason, you must:

- apply for the "dichiarazione di valore" (declaration of equivalent value) at an Italian consulate or embassy abroad (please apply for the declaration as soon as possible since processing times might be long);
- upload the declaration upon enrolment at the very latest, together with the other relevant documents.

### **EU-Citizens and equivalent**

You might apply for more than one study programme. If you are excluded in the first session, you might apply again in the second one.

#### **Considered as equivalent are:**

1. Citizens from Norway, Iceland, Liechtenstein, Switzerland, San Marino and the Vatican City State;
2. Non-EU citizens with a valid permit to stay in Italy (see article 39, paragraph 5 of decree no. 286 of 25.07.1998: "**permesso di soggiorno**" (residence permit) for work, family reasons, political or humanitarian asylum, religious reasons). In this case, you apply directly to the University as described above and must submit a copy of your valid permit to stay. A permit to stay for study reasons or a visa for tourism is **not** If the permit has expired, you must attach a renewal request. **Please note** that if you do not provide the permit, you will be automatically considered a non-EU citizen living abroad and therefore subject to the admission procedure through the Italian authorities in your country of origin.

### **Non-EU-Citizens (living outside of Italy)**

Only one application period is offered. After the deadline it is not possible to apply anymore. Application fee: € 30.

As a non-EU citizen living abroad, you will also have to **apply at the Italian authorities** (consulate or embassy) in your country. The deadlines set by the Italian Ministry of Education, Universities and Research (<http://www.studiare-in-italia.it/studentistranieri/>) must be met. At the Italian authorities, you can apply for one study programme only. Should you not follow this procedure with the local Italian authorities, your direct online application to unibz will be declared null and void.

## **Admission procedure**

You are ranked on the basis of your grade average of the passed exams of the first degree (excluded the final grade of the degree).

A test/interview is required only in case the ranking does not lead to a final ranking list (see

Section “Deadlines”).

The commission’s decision will be based on the competences and soft skills. The Faculty secretariat informs you in case an interview takes place.

**In the application portal, you shall upload:**

**1. Qualification:**

- **if graduated in Italy:** diploma supplement or self-declaration (following the Italian D.P.R. no. 445/2000) of the degree awarded with the exams passed (if graduated) or with the exams passed (if not graduated yet);
- **if graduated abroad:** diploma supplement or final degree certificate with exams passed (if graduated) or transcript of records (if not graduated yet) in Italian, German or English.

**The above must contain the following information:** final grade, exams passed with grade and date of passing, credit points, scientific fields (the latter only for Italian titles).

**For qualifications obtained abroad, also:** scale of grades awarded by the university of provenance (with a minimum final grade to obtain the qualification and a maximum final grade achievable).

The Faculty reserves the right to request a description of the contents of the courses and/or teaching hours where necessary.

**2. Excel file:** Please use the file available in the application portal. Applications without a completed excel file will not be considered.

**3. Curriculum vitae (English)**

**Please note:** mendacious declarations will be sanctioned by criminal law and will result in your automatic exclusion.

**Further documents are required only if you are interested in participating in the double degree programme with the Otto von Guericke University Magdeburg (OVGU):**

**4. Documentation about previous internships in industry** (indicating the number of days/weeks and companies). The missing upload of the form leads to the exclusion from the ranking list for the Double Degree Programme.

**Ranking lists**

The Admission Committee will only evaluate the documents uploaded in the portal by the application deadline. The ranking lists with the admitted students will be published here and are only valid for the respective academic year.

The general ranking list includes all students who submitted the application for the master.

The second ranking list includes only the students who express their interest in attending the Double Degree Program with Otto von Guericke University Magdeburg (OVGU) through the application portal.

Students on the **waiting list** of the ranking for the double degree programme with Otto von Guericke University Magdeburg (OVGU) of the Early Bird Application will be inserted in the ranking list for the double degree programme of the Late Application (only for those who

secured their admission; see chapter below), if there still are available places.

## Securing your Admission and Enrolling

If you have been admitted to more than one study programme, you can only secure your admission in one of them. Doing so you refrain from the admission to other programmes.

### 1. Choose the study programme and pay the fees (to secure your admission) in the application portal.

The deadlines are indicated in the “Deadlines” section.

If you do not meet this deadline, you will automatically be excluded and the next applicant in the ranking list will be admitted.

For EU citizens and citizens given parity of treatment only: any remaining places of the early bird application, will be offered in the late application.

**Please note** that you do not gain full student status by only paying the tuition fees. This status will only be acquired upon enrolment. If you have secured your admission, there will be no refund of the tuition fees unless you do not pass your secondary school final exam or, in the event of non-EU applicants living abroad, you do not receive the documents necessary for enrolment from the Italian authorities in your country.

### 2. Enrol online in the application portal.

The deadlines are indicated in the “Deadlines” section.

Enrolment is recommended as early as possible, so you have the possibility to upload incomplete documents before the deadline.

If you do not meet the enrolment deadline, you will be excluded and the next applicant in the ranking list will be admitted.

#### Admission with reservation:

If you do not have the required academic qualification, you will be given a conditional offer for a study place and you must submit your qualification upon enrolment. If you achieve your qualification after the enrolment deadline, you cannot enrol, and you will lose your place which will be offered to the subsequent applicant in the ranking list. **Advice:** If you achieve your qualification after the enrolment deadline, you should not pay the tuition fees to confirm the study place. You will be able to submit a late enrolment request and, only if there are study places still available, you can enrol by 18 December 2020.

#### If you have gained your qualification abroad, you must upload (if not uploaded upon application):

- diploma of your qualification
- official translation of your diploma into Italian (translation is not necessary if it has been issued in German or English)
- the Diploma supplement, where it must be indicated: that you have achieved at least 180 credit points (ECTS) and that the study title gives access to a Master course. In case of doubt, unibz reserves the right to request further documents (e.g. declaration of equivalent value).

- the declaration of equivalent value of your qualification, in the case the Diploma supplement is missing.

At the beginning of the academic year you must submit **the originals** of the above-mentioned documents to the Student Secretariat.

**Please note** that if you do not possess a valid admission qualification, you could be excluded with Rector's decree even after enrolment.

**If you are a non-EU citizen living abroad:**

If you are eligible for admission (check the ranking lists), the Italian Authorities in your own country will issue you the entry visa for studies/university.

This will allow you to arrive in Italy to enrol for the study programme that you have applied for, after passing the admission procedure.

According to Italian law, within 8 working days of your arrival in Italy, you must have applied for the residence permit: as soon as you arrive, get in touch with the Advisory Service and you will be given the necessary information for starting the procedure.

Once you will obtain your residence permit (permesso di soggiorno), you have to hand it in at the Student Secretariat personally or via e-mail.

**Students intending to transfer from another Italian University to unibz** must submit to the Student Secretariat - at the beginning of the academic year - a copy of the transfer application presented at the university of provenance.

## Tuition Fees

Fees amount to **€ 1348.50**.

- **1st instalment (€ 748.50)\***: includes the provincial tax for the right to study of € 148.50 and a revenue stamp of € 16.
- **2nd instalment (€ 600)**: must be paid by 31 March 2021.

Delayed payment of the second instalment will result in a fine being levied. If you have not paid the tuition fees, you will be unable to take exams and will not be able to transfer to other universities or other study programmes.

If you drop out of a programme, interrupt your studies or are excluded from studies, you are not entitled to reimbursement of the fees.

Exemption from the tuition fees (and the provincial tax) is granted to:

- Students with a disability recognized under article 3, paragraph 1, of Law No 104/1992, or with a disability up to or exceeding 66%: the disability certificate, issued by the health authorities, must be handed in at the beginning of the academic year.
- Foreign students who have been granted a scholarship from the Italian government.

Students who benefit from a scholarship granted by the Autonomous Province of Bozen-Bolzano are entitled to receive a refund of the tuition fees.

## Recognition of credit points from previous studies

Credit points from previous university studies can only be recognised after enrolment if the exams taken at the university of provenance are equivalent in content to those offered at unibz. You can fill out the application after enrolment at your Faculty Secretariat.

The Advisory Service provides support regarding your choice of study. In many cases a simple call or a short request is enough to get the relevant information (Tel. +39 0471 012100).

## **Advisory Service**

Universitätsplatz 1 - piazza  
Università, 1  
Italy - 39100, Bozen-Bolzano  
Tel +39 0471 012100  
Fax +39 0471 012109  
[apply@unibz.it](mailto:apply@unibz.it)

## **Opening Hours**

Infopoint

Tuesday and Thursday: 14:00 - 16:00

Wednesday and Friday: 10:00 - 12:30

For appointments outside the  
opening hours:

T. +39 0471 012100 or [apply@unibz.it](mailto:apply@unibz.it)

Subject to change.

Latest update: 28.07.2020