

## **Conditions for admission for the study**

### **in university degree programmes at VŠB - Technical University of Ostrava for the academic year 2017/2018 – the follow-up Master type of study**

Follow-up Master degree programmes (fields of study), which will open in the academic year 2016/2017 at VŠB - Technical University of Ostrava:

- follow-up Master degree programme **Mechatronics** with the fields of study Mechatronic Systems and Automotive Electronics in the full-time and combined form of study, the candidates are admitted for the programme,
- follow-up Master degree programme **Nanotechnologies** with the field of study Nanotechnologies in the full-time form of study, the candidates are admitted for the field of study,
- follow-up Master degree programme **Computational Science** with the field of study Computational Science in the full-time form of study, the candidates are admitted for the field of study,
- follow-up Master degree programme **Technology of Processes in Energetics** with the field of study Technology of Processes in Energetics in the full-time form of study, the candidates are admitted for the field of study,
- follow-up Master degree programme Physics with the field of study Applied Physics in the full-time form of study, the candidates are admitted for the field of study,

The general conditions for admission follow from Section 48 to Section 50 of the Act 111/1998 Coll. the Act on higher Education institutions and on the amendment and supplement to some other Acts (The Higher Education Act), as subsequently amended (hereinafter referred to as the "Act"), which are further specified in the Admission Procedure Rules of the VŠB-Technical University of Ostrava (hereinafter referred to as "VŠB TUO").

A condition for admission in a follow-up Master's degree programme (field of study) is to complete the Bachelor or Master study in the Czech Republic or abroad and to pass the admission procedure successfully.

### **Follow-up Master study**

#### **1. The characteristics of the system of studies**

Candidates who have completed at least a Bachelor's degree programme can apply for the study in Master's degree programmes. The standard length of the follow-up Master study is 2 years. After completing the Master degree programme, the graduate acquires the degree "Inženýr (Master)" (abbreviated as Ing.).

Follow-up Master degree programme **Nanotechnology** with the field of study Nanotechnology is accredited in the full-time form of study in Czech and English. The study is intended for graduates of the Bachelor study focused on technology and natural sciences, especially in the field of study Nanotechnology and fields of study focused on materials, technology, applied sciences, physics, and chemistry.

Follow-up Master degree programme **Mechatronics** with the fields of study Mechatronic Systems and Automotive Electronics is accredited in the full-time and combined form of study in Czech and English. The study is intended for graduates of Bachelor's degree programmes at technically oriented university faculties, especially for graduates of Bachelor's degree programmes at faculties of mechanical engineering, electrical engineering, technology, applied sciences, mechatronics, etc.

Follow-up Master's degree programme **Computational Sciences** with the field of study Computational Sciences is accredited in the full-time form of study in Czech and English. The study is intended for graduates of the Bachelor study in mathematics, computer science, engineering mechanics, physics and chemistry or a related field of study. No specific knowledge in the field of supercomputing and high performance computing is expected.

Follow-up Master's degree programme **Technology of Processes in Energetics** with the field of study Technology of Processes in Energetics is accredited in the full-time form of study in Czech and English. The study is intended for graduates of the Bachelor study focused on technology and natural sciences; especially focused on Mechanical Engineering and Chemistry and in the fields of study focused on energetics, environmental engineering, technology, applied sciences, physics, and chemistry.

Follow-up Master's degree programme **Physics** with the field of study Applied Physics is accredited in the full-time form of study in Czech and English. The study is intended for graduates of the Bachelor study focused on technology and natural sciences; especially in the programmes physics or applied physics, or teaching physics, in the technical programmes, fields of study focused on materials engineering, electronics, nanotechnology, and so on

## **2. The application for the study**

- The application has to be submitted electronically (electronic application), it is available on the website of VŠB - TU Ostrava ([www.vsb.cz](http://www.vsb.cz)), then it has to be printed **and sent to the address:**

VŠB - Technical University of Ostrava  
University Study Programmes  
The Study Department  
17. listopadu 15  
708 33 Ostrava – Poruba

It is necessary to demonstrate a certified copy of the Bc. diploma to the application for the Bachelor study (if the diploma is from other university than VŠB - Technical University of Ostrava). **Candidates who have completed the Bachelor study at a foreign university**

**will demonstrate a certified copy of the achieved education (it does not apply to the Slovak Republic).**

A medical certificate of health for studying and for the practice of the profession is not required.

If the application has formal shortcomings, the study office of the university study programmes will ask the candidate in writing to make the corrections and additions. The admission procedure will not be initiated if the candidate does not remove the shortcomings in the application within a time limit which shall be established.

The deadline for submission of the applications is **30 April. 2017** (the 1st round of the admission procedure).

In the event that the number of the admitted students is not full in the first round of the admission procedure, the second round of the admission procedure will be opened in programmes (fields of study) that have not been filled completely.

The deadline for submission of the applications is **15 August 2017** (the 2nd round of the admission procedure).

Open Day will take place on: **3 February 2017** .

- There is a fee for the operations associated with the admission procedure amounting to **CZK 500.00**.

The fee shall be paid to the account:

- The account number:100954151/0300
- Variable symbol: generated on the electronic application
- Constant symbol: 0308
- The account name: VŠB-TU Ostrava, 17. listopadu 15, 708 33 Ostrava - Poruba
- IBAN: CZ51 0300 0000 0001 0095 4151

- The fee for the study in a foreign language

The fee for the study in the follow-up Master's degree programme (field of study) in a foreign language for each academic year amounts to **EUR 4,000.00**.

### **3 Entrance examination**

The essence of the admission procedure is an overall assessment of the preconditions of the candidate for the study in the selected study programme (field of study) at VŠB - Technical University of Ostrava.

Part of the entrance procedure is:

- evaluation of the Bachelor's study
- entrance examination, which is has a written form;
- the verification of the ability of the candidate to study in the language of the study programme.

### **3. 2. The invitation for the entrance examination**

The candidate is invited for the entrance examination in writing by a letter dispatched to the address indicated in the application for the study. In the case of remission of entrance examination, the candidate shall be informed about this fact together with the next steps of the admission procedure.

### **3. 3. Written entrance examination**

Upon arrival to the entrance test, the candidate shall demonstrate his/her identity to the authorised personnel of the university.

During the test, it is forbidden to use mobile phones, computers, connection to the Internet, and other communication technologies.

**Degree programme Mechatronics**, fields of study Mechatronic Systems and Automotive Electronics

The entrance examination for the degree programme Mechatronics is written and it is aimed at verifying the candidate's knowledge at the level of Bachelor's degree programmes of three basic modules - the mechanical engineering module, electrical module, and the module of automation and control technology, which forms the basis of the study programme Mechatronics.

#### *The basic characteristics of the modules:*

- **Mechanical engineering module**  
Solid mechanics, fundamentals of fluid mechanics and thermodynamics, machine parts and mechanisms, Manufacturing Technology, CAD systems
- **Electrical engineering module**  
Electrical circuits, electrical measurements, electronics, electric drives, digital and microcomputer technology.
- **The automation and control technology module**  
Fundamentals of automation - logic control, control circuits, automatic control, sensor technology, control systems, mechatronic systems

The written exam consists of three parts, whose content is focused on the said modules, the individual parts contain 2 examples, or an example and a written answer to a specialized question.

The written exam is evaluated by 0 to 120 points.  
The duration of the written test is 90 minutes:

The permitted aids: calculators, writing utensils.

### **Degree programme Nanotechnology, field of study Nanotechnology**

The entrance exam for the degree program Nanotechnology is written, namely in physics and chemistry.

*Recommended literature - textbooks for the basic course in physics and chemistry for universities focused on natural sciences or technology.*

#### The basic characteristics of the modules:

- **Physics module**  
Solid mechanics, ideal liquids, ideal gases, gravity, electric and magnetic field, mechanical vibrations and waves, geometrical and physical optics.
- **Chemistry module**  
Composition of systems (solutions, the amount of substance concentration), chemical equations (their registration and stoichiometric calculations), chemical equilibrium (equilibrium constant) thermochemistry (heat of reaction), electrolytic dissociation (acids and bases, pH).

The number of examples in the written test: 6 (3 examples in physics and 3 examples in chemistry).

The method of evaluation: 0 to 120 points for the written test.  
The duration of the written exam: 90 minutes.

Permitted aids: calculator, periodic table of elements.

### **Study programme Computational Sciences, field of study Computational Sciences**

The entrance exam for the degree program Computational Sciences is written, and it is aimed at verifying the candidate's knowledge at the level of Bachelor's degree programmes in computer science and mathematics.

*Recommended literature - books of basic courses in calculus, linear algebra, algorithms and data structures and programming for universities focused on natural science or technology.*

*The basic characteristics of the modules:*

- **Informatics module**

Data structures (arrays, list, queue, stack), algorithms (searching, sorting), programming (program operation control, functions, I/O, working with memory), etc.

- **Mathematics module**

Differential and integral calculus, fundamentals of linear algebra (matrix algebra, vector space and subspace, bilinear and quadratic forms, scalar product, orthogonality), etc.

The number of examples in the written test: 6 (3 examples in informatics and 3 examples in mathematics).

The method of evaluation: 0 to 120 points for the written test.

The duration of the written exam: 90 minutes.

The permitted aids: calculators, writing utensils.

**Degree programme Technology of Processes in Energetics, field of study Technology of Processes in Energetics**

The entrance exam is written and it is aimed at verifying the candidate's knowledge at the level of Bachelor's degree programmes of two basic modules – the mechanical engineering module, chemistry module, which forms the basis of the study programme Technology of Processes in Energetics

*The basic characteristics of the modules:*

- **Mechanical Engineering Module**

Solid mechanics, fundamentals of fluid mechanics and thermomechanics, machine parts and mechanisms, Manufacturing Technology

- **Chemistry module**

Composition of systems (solutions, the amount of substance concentration), chemical equations (their registration and stoichiometric calculations), chemical equilibrium (equilibrium constant) thermochemistry (heat of reaction), electrolytic dissociation (acids and bases, pH).

The written exam consists of two parts, whose content is focused on the said modules, the individual parts contain 2 examples, or an example and a written answer to a specialized question

The written exam is evaluated by 0 to 120 points.

The duration of the written test is 90 minutes:

The permitted aids: calculators, writing utensils.

### **Degree programme Physics, field of study Applied Physics**

The entrance exam for the degree programme Physics is written, namely in physics and chemistry.

*Recommended literature - textbooks of the basic course in physics for for universities focused on natural science or technology, e.g. Halliday a kol., Fyzika 1+2, Vutium 2013, ISBN: 978-80-214-4123-1, introductory textbook on algebra and mathematical analysis for universities, overview of mathematics for physicists, e.g.: Jozef Kvasnica: Matematický aparát fyziky, Academia 1997, ISBN 80-200-0603-6*

#### The basic characteristics of the modules:

- **Physics module**  
Solid mechanics, ideal liquids, ideal gases, gravity, electric and magnetic field, mechanical vibrations and waves, geometrical and physical optics.
- **Mathematics module**  
Real functions (power, exponential, logarithmic and goniometric), complex functions, differential and integral calculus, linear algebra (matrix algebra, vector space, scalar and vector product of vectors).

The number of tasks in the written test: 6 (3 examples in physics and 3 examples in mathematics).

The method of evaluation: 0 to 120 points for the written test.

The duration of the written exam: 90 minutes.

The permitted aids: calculators - only for the part in physics

### **3.4. Remission of the written entrance examination**

#### **Degree programme Mechatronics**

The written entrance examination for the follow-up Master's degree programme Mechatronics can be remitted in the following cases:

- the candidate has successfully completed the study in the Bachelor's degree program Mechatronics at VŠB - Technical University of Ostrava and achieved the study average for the entire study at least 70 points.
- the candidate has successfully completed the study in a related Bachelor's degree programme at technically oriented university faculties. These are mainly graduates of

Bachelor's degree programmes at faculties of mechanical engineering, electrical engineering, technology, applied sciences, mechatronics, etc. At the same time, the candidate achieved an average grade 2.5 for the subjects corresponding to the individual modules of the entrance examination (mechanical engineering module, electrical and automation and control technology modules) - at least one subject for each module.

### **Degree programme Nanotechnology**

The written entrance examination for the follow-up Master's degree programme Nanotechnology can be remitted in the following cases:

- the candidate has successfully completed the study in the Bachelor's degree programme Nanotechnology at VŠB - Technical University of Ostrava and achieved the weighted study average for the entire study at least 70 points, or
- the applicant has successfully completed the studies in a related Bachelor's degree programme and s/he has the subjects of the basic university courses in physics (mechanics, optics, electricity and magnetism) and chemistry (general and inorganic, organic, physical and analytical) graded on average up to 2.00 inclusive.

### **Degree programme Computational Sciences**

The written entrance examination for the follow-up Master's degree programme Computational Sciences can be remitted in the following cases:

- the candidate has successfully completed the study in the Bachelor's degree programme Applied Sciences and Technologies at VŠB - Technical University of Ostrava and achieved the weighted study average for the entire study at least 70 points.
- the applicant graduated from the Bachelor study in mathematics, computer science, engineering mechanics, physics and chemistry, or any related field of study, and at the same time, s/he achieved an average grade 2.5 for the subjects that correspond to the individual modules of the entrance examination (informatics, mathematics modules) - at least one subject for each module.

If the number of applicants who meet one of the above conditions for admission without the entrance test in any of the degree programmes (field of study) exceeds 90 % of the guideline number of the given degree programme (field of study), the right is reserved to cancel the admission without the entrance test for the given degree programme (field of study). In this case, the entrance exam must be taken by all candidates for the given degree programme (field of study).

### **Degree programme Technology of Processes in Energetics**

The written entrance examination for the follow-up Master's degree programme Technology of Processes in Energetics can be remitted in the following cases:

- the applicant has successfully completed the study in a related Bachelor's degree programme at a technically oriented faculty of a university, and at the same time s/he achieved an average grade 2.5.

### **Degree programme Physics**

The written entrance examination for the follow-up Master's degree programme Physics can be remitted in the following cases:

- the candidate has successfully completed the study in the Bachelor's degree programme Physics at VŠB - Technical University of Ostrava and achieved the study average for the entire study at least 70 points.
- the candidate has successfully completed the studies in a related Bachelor's degree programme and s/he has subjects in basic university courses in mathematics and physics graded 1 or 2, and s/he obtained at least 30 credits in total, of which s/he obtained at least 15 credits for subjects in physics.

### **3.5. - Verification of the ability of the candidate to study in the language of instruction for the degree programme.**

Only a candidate who demonstrates the ability to study in the language of instruction for the degree programme (Czech and English) can be admitted for the study. The proof of the ability to study in the Czech language is particularly the school-leaving examination in the Czech language or the Slovak language. The Vice-Rector of VŠB-TU Ostrava in charge may recognize an official document of the examination in the relevant language in the state-recognized (accredited) educational facility as a proof of ability to study in the appropriate language. In other cases (English language), the ability to study in the language of the degree programmes is demonstrated by the examination in the relevant language within the previous education. In special cases, the Vice-Rector of VŠB - TU Ostrava in charge may remit this exam in the case of the candidate.

### **3.6. Assessment of excuses for the absence at the entrance examination**

The candidate has to apologize for his/her absence at the entrance examination in writing within 5 days from the date of the entrance examination at the latest. The Vice-Rector of VŠB - TU Ostrava in charge makes decisions concerning excuses for the absence.

### **3.7. Access to the materials decisive for admission**

The candidates, in accordance with Section 50 Subsection 5 of the Act, have access to their materials that have a bearing on their admission. Access to the materials will be enabled on the day of the entrance examination, and after completion of the written entrance examination and its evaluation. The candidates will be notified on the time and place before the start of the written part of the entrance examination.

### **3.8. Preliminary date of the entrance examination**

**22 June 2017** (the 1st round of the admission procedure).

**24 August 2017** (the 2nd round of the admission procedure).

## **4. Deciding on admission to the study**

### **4.1. Procedure when deciding on admission to the follow-up Master study**

When deciding on admission for the study in the follow-up Master's field of study, the candidates are ranked according to the achieved number of points.

If there are more candidates who achieved the same point ranking as the last admitted candidate satisfying the specified maximum number of admitted candidates, all candidates with that ranking will be admitted.

### **4.2. Notification of candidates for entrance examination results**

The candidate is notified of the results of the admission procedure in writing within 30 days from the date of the entrance examination.

### **4.3. The maximum number of admitted students**

#### **a) Programme Mechatronics**

Full-time follow-up Master study - study in Czech	30 students
Full-time follow-up Master study - study in English	20 students
Full-time combined Master study - study in Czech	20 students

#### **b) Programme Nanotechnology, field of study Nanotechnology**

Full-time follow-up Master study - study in Czech	40 students
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Full-time follow-up Master study - study in English	20 students
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**c) Programme Computational Sciences, field of study Computational Sciences**

Full-time follow-up Master study - study in Czech	20 students
Full-time follow-up Master study - study in English	10 students

**d) Programme Technology of Processes in Energetics, field of study Technology of Processes in Energetics**

Full-time follow-up Master study - study in Czech	40 students
Full-time follow-up Master study - study in English	20 students

**e) Programme Physics, field of study Applied Physics**

Full-time follow-up Master study - study in Czech	20 students
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**5. Related documents**

Statute of VŠB - Technical University of Ostrava  
 Study and Examination Rules and Regulations for follow-up Master's degree programmes at VŠB - Technical University of Ostrava.

**6. Final Provisions**

Conditions for admission for the university degree programmes (fields of study) at VŠB-TU Ostrava for the academic year 2017/2018 were approved by the Academic Senate of VŠB-TU Ostrava on 13 December 2016. The validity of the document expires on announcing the conditions for admission for the university degree programmes for the next academic year.