



**study mathematics,
physics, and
computer science
at charles
university, prague**

you equal matfyz

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study mathematics, physics, and computer science at charles university, prague

Learn from prominent and distinguished academics at one of the oldest and most highly regarded universities in Europe, in one of the most beautiful cities in the world. Experience student life in the Czech capital and explore the incredible richness of Prague's historical heritage. To all motivated, diligent, and gifted young people who dare to think, we offer affordable, high-quality three-year Bachelor's and two-year Master's programmes taught entirely in English. At the graduate level, the Faculty of Mathematics and Physics also offers Doctoral programmes in

all disciplines, allowing PhD students to further their academic and scientific research. Both the undergraduate and graduate programmes have been running with great success for Czech students for years, and now they are open to international students as well. All degrees are accredited by the Ministry of Education, Youth, and Sports of the Czech Republic and are internationally recognized.

Learn more about our study programmes and admission requirements on page 49.





study in one of the world's most attractive cities

Studying in Europe will surely appeal to many but studying in the very heart of Europe gives you a number of exciting prospects and various advantages. Both the Czech Republic and its famous capital, Prague, are sure to win you over with their unequalled beauty. You will find that the country's rich cultural heritage and its beautiful nature, with thousands of historical locales, castles, and chateaux, are incomparable to any other place in the world. Prague does not in any sense lag behind and has been celebrated for its architecture, museums and art

galleries, classical music concerts, and for its magical atmosphere. It is a lively and dynamic city well suited for young students. With no exaggeration, you will discover that there is an incredible variety of exciting things to do while studying here. At the top of that, since the Czech Republic is a member of both the European Union and the Schengen Area, the exploration of destinations outside its borders is also remarkably easy.

Learn more about the Czech Republic and Prague on page 11.



BACHELOR OF COMPUTER SCIENCE

The Bachelor's programme in Computer Science provides the students with a sound theoretical base, which is invaluable for working with applications and software development and is a necessity for further study and research. We will enable you to develop the skills of abstraction, generalization, logical reasoning, problem solving and critical thinking - capabilities widely sought by employers all around the world.

MASTER OF COMPUTER SCIENCE

The focus of this programme is on understanding the core principles of how and why things work and on the application of these principles. The strong theoretical underpinning of the Master's programme gives our graduates a competitive advantage in a dynamically evolving world where today's technologies become often obsolete tomorrow.

MASTER OF MATHEMATICS

The Master of Mathematics programme is designed to encourage analytical thinking, creativity and comprehensive understanding in conjunction with the ability to apply mathematical methods to real-life problems. In our curriculum, we put a strong emphasis on ideas and concepts that have stood the test of time and that will endure.

MASTER OF PHYSICS

The aim here is to explore fundamental mechanisms and effects that govern new technological breakouts and novel materials. In our fast-accelerating world, we daily encounter the benefits of such underlying new discoveries in a broad range of applications including computers, health care or climate protection. Much emphasis is put on involving students in research, whether it be experimental work or theoretical calculations, searching for new materials or for new particles in particle accelerators, tracking earthquakes, revolutionizing data storage, or exploring the universe itself.

Find out more about our study programmes and admission requirements on page 52.

Lastly, already during their undergraduate and graduate studies, students have an opportunity to work directly with a range of our commercial sector partners, developing and implementing real-life assignments on top of the joy from advances in fundamental understanding of our world.

Read more about our Partnership Programmes on page 31.

enroll at a top-level institution

Established in 1348, Charles University has been a highly valued educational institution for centuries. A great number of historical figures have attended or are associated with the university, including Albert Einstein, Ernst Mach, Jan Hus, and Franz Kafka. Today, it is a dynamic and modern research university ranking among the top 2 % of universities worldwide, and in Europe it belongs to the top 100 institutions of higher learning. The Faculty of Mathematics and Physics has been declared the best

computer science school in the Czech Republic, and, perhaps more notably, Microsoft Academic Search places it among the top 10 institutions worldwide in the field of discrete mathematics. Our faculty is also one of the few schools that have ever won the International Collegiate Programming Contest World Finals - an annual competition organised by the world's largest educational and scientific computing society.

Discover more about Charles University on page 19.

invest in an education that will pay off

A great majority of our graduates successfully establish themselves in important positions in large international companies shortly after graduation. Thanks to the thorough training provided by the Faculty of Mathematics and Physics, they rapidly adapt to working with new technologies and learning new approaches, for which they are highly valued by their employers. Many of our graduates now work for Google, IBM, Deloitte, Ernst&Young, and other well-respected corporations,

and a few of our former students have also been successful in starting their own businesses, of which quite a few have become well-known around the world. Some of our graduates decide to continue their education and research, successfully applying for doctoral, post-doctoral, and lectureship positions at our university or at academic institutions abroad.

Read more about employment possibilities and meet our graduates on page 41.



enjoy affordable costs and more

High-quality university education does not have to be unaffordable. For all Bachelor's and Master's programmes at Charles University, the annual tuition fee is EUR 3,400/5,700 for EU/Non-EU students. On top of that, the average monthly cost of living in Prague is around EUR 600, including accommodation, meals, public transportation costs, and leisure activities. As a full-time student at

our university, you will enjoy several other benefits such as convenient, low-cost accommodation in student dormitories and free of charge sporting activities. You will also be able to apply for the available scholarships and grants or spend some time studying abroad at another European university.

Find out more about expenses and benefits on page 60.



**study at the very
heart of europe**

The Czech Republic is a landlocked central European country with its capital Prague, otherwise known as “The City of a Hundred Spires.” It is surrounded by low mountain ranges that make up most of its natural borders – with Germany to the west, Poland to the north, Slovakia to the east, and Austria to the south.

The Czech Republic is famous for its innumerable castles and chateaux spread over the beautifully varied landscape; for its cities full of Baroque, Gothic, and Art-Nouveau architectural sights; for its world-famous spa towns and their thermal springs; as well as for its artisanal industries and influential people who were born or lived here. The country has four national parks, fifteen cultural sites, and one natural property listed on the World Heritage List. The Czech Republic is a member state of the European Union and part of the Schengen Area and is therefore easily accessible by all kinds of transportation. The country’s economy is developed and stable – the Czech Republic has been ranked as an

advanced economy by the International Monetary Fund and classified as a high-income economy by the World Bank. Many leading IT companies such as Google, IBM, Microsoft, Oracle, and Hewlett-Packard have their branches in the Czech Republic, and the widely used computer anti-virus programs AVG and Avast originated here. The country has a very low crime rate and civil disorder is particularly rare here – according to the Australian Institute for Economics and Peace, the Czech Republic is among the ten most peaceful countries in the world. The climate in the Czech lands is moderate with four seasons. Winters can vary from mild to chilly, and snowfall is fairly common. The temperature during the winter period can occasionally rise above 0 °C (32 °F) or fall under -15 °C (5 °F). Summers are usually fairly warm, with the temperature often rising up to 35 °C (95 °F). The average temperature in January, the coldest of the winter months, is about -5 °C (23 °F), and in July, the warmest summer month, it is around +23 °C (73 °F).

live in the city of a hundred spires

Charles University is located right in the historical centre of Prague. The city's splendour, location, and many other characteristic elements have earned it a number of nicknames — *the Golden City, the Heart of Europe, the City of a Hundred Spires, and the Pearl of Cities*. Prague abounds with well-preserved examples of remarkable architecture, and many of its old quarters and historical sights are subjects of local legends. With its history dating back more than 1 100 years, the city is sure to impress you with its narrow-cobbled streets, lofty church spires and cupolas, splendid palaces and townhouses, bridges criss-crossing the river Vltava, and extensive green spaces in its gardens, parks, and islands. In 1992, Prague's historical centre was included in the UNESCO list of World Heritage Sites, and it is no wonder that it became such an attractive tourist destination (more than eight million tourists visited Prague in 2019). The

city's most remarkable monuments, to name just a few, are Prague Castle - the largest ancient castle complex in the world; the Charles Bridge - the oldest bridge in Prague built by the Holy Roman Emperor Charles IV in 1357; the Old Town Square and City Hall with the famous Astronomical Clock - a place associated with some of the most significant events in the country's history. Public transportation in Prague is fast, reliable, and affordable. It is also the best way to get around the city and explore its various attractions. As a student, you can enjoy a discounted rate for Prague's outstanding transportation system which includes trams and buses, day or night, as well as the underground metro service (which runs 18 hours a day). Cycling is another option of getting around Prague that is gaining more and more popularity. In recent years, there has been a continued development of safe cycling routes throughout the city.



explore, travel, get inspired

You will find an astonishing number of things to discover in Prague, from its history and architecture to cultural and social events. Prague is especially well known for its recitals and symphonies performed every evening in the city's famed concert halls, churches, and palaces. There are numerous art exhibitions, concerts, as well as film, music, and literature festivals organised every year. Outside Prague, many splendid his-

torical cities and towns adjacent to chateaux and castles are sure to impress. Furthermore, since the Czech Republic has one of the highest densities of forts in the world, it leaves you with around two thousand castles, strongholds, and chateaux to see while touring the countryside. Whether you choose to have a look at the former kings' lodgings, medieval torture chambers, beautifully decorated dancing halls, or simply to



enjoy friendly atmosphere and meet new people

have a stroll around castle gardens, you will undoubtedly enjoy the fascinating touch of history everywhere around you. Moreover, thanks to the country's central location within Europe, the rest of the continent is easily accessible either by train, bus, car, or air. You will find a number of stunning historical cities within arm's reach – direct, comfortable, and reasonably

priced bus services will take you to Dresden in only two hours, to Nuremberg or Munich in four to five hours, and to Vienna or Berlin in around five hours. Direct trains and busses also run to other exciting European cities such as Budapest, Paris, or Krakow. Not a fan of road or rail travel? In only an hour or two, a plane will take you anywhere you want to go in Europe.

After the 1989 Velvet Revolution, the Czech Republic rapidly became a highly popular tourist destination. Likewise, Prague quickly turned into a cosmopolitan and English-friendly city, with the majority of its inhabitants speaking English and/or another foreign language. Tens of thousands of foreigners have happily settled here, enjoying the country's combination of high living standards and low living expenses. Because of this, Prague maintains active communities of expatriates who, by running their own webpages in English, provide newcomers with essential information about life in the Czech Republic. Apart from functioning simply as a survival guide to living in Prague, the friendly expat community organises various social events and provides information about cultural experience both in and outside the city. Student exchange has also been enjoying great popularity, especially since the introduction of the European

Student Exchange Programme, which enables university students to temporarily attend academic institutions while living in a foreign country. To help the incoming students adapt to life in Prague, Charles University has set up an ESN Charles University Prague, a student society that organises diverse social, cultural, and sports events for international and Czech students alike. These include hiking, cycling, canoeing, and rafting trips around the country, various themed parties, and excursions abroad. The ESN CU Prague also runs a Buddy Programme – a programme which aims to bring together international and home students. It is primarily designed to provide the incoming students with a helping hand for an easier and friendlier start in a new country.

WEB: <https://esncuprague.cz>
FACEBOOK: [ESN CU Prague](#)
INSTAGRAM: [@esncuprague](#)



Jaroslav Heyrovský



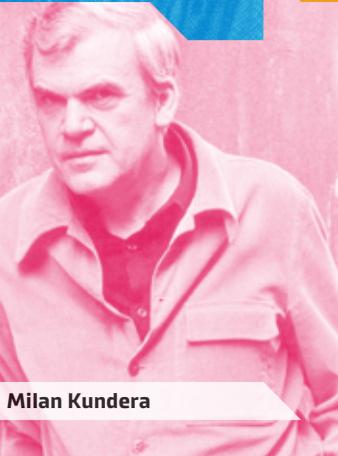
Jan Hus



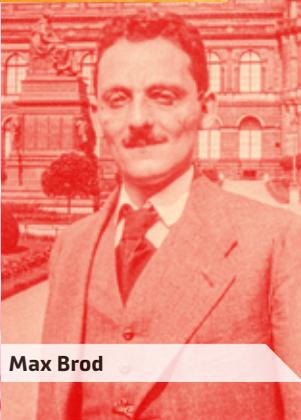
Karel Čapek



Bohumil Hrabal



Milan Kundera



Max Brod



Franz Kafka



Bernard Bolzano



Carl Ferdinand Cori

in the footsteps of giants

The Czech Republic has both produced and been home to a considerable number of famous personalities, including renowned thinkers, inventors, and artists. For instance, a significant church reformer **Jan Hus** or John Huss (1369-1415), who is considered to have strongly influenced such figure as Martin Luther, was of Czech origin. Hus, a priest and philosopher, was much ahead of his time with his theories and teachings preceding the Protestant movement by an entire century. Jan Hus was a student and later a master at Charles University and was eventually appointed its rector in 1402. In 1415, he was burned at the stake for heresy against the Catholic Church, yet his legacy and deeds are still praised today. In 2015, the 600th anniversary of his execution will take place.

In the beginning of the 17th century, a German-born mathematician and astronomer **Johannes Kepler** (1571-1630) resided in Prague where he worked closely with a fellow astronomer **Tycho Brahe** (1546-1601). After Brahe's death in 1601, Kepler succeeded him as imperial mathematician at the court of **Rudolph II**,

providing the emperor with astrological advice. It was while living in Prague that Kepler developed some of his most influential theories. Brahe's final resting place is the Church of Our Lady before Týn in Old Town Square, where Prague's famous Astronomical Clock is also located.

A famous physicist and philosopher **Ernst Mach** (1838-1916), the originator of the Mach principle, was born in today's Brno, the second largest city in the Czech Republic. After having received his doctorate in physics from the University of Vienna, Mach was appointed a Professor of Mathematics and later of Physics in Graz, Austria. In 1867, he returned to his home country to become a Chairman of Experimental Physics at Charles University in Prague.

Composers of classical music **Bedřich Smetana** (1824-1884) and **Antonín Dvořák** (1841-1904) were born and schooled in Prague. Whereas Smetana's nine operas became part of Czech popular consciousness, Dvořák's *From the New World* symphony has conquered the world and, in 1969, even the Moon.

One of the world's most prominent physicists, **Albert Einstein** (1879-1955), was appointed a full professor of theoretical physics at Charles University in 1911 (the German part of the former Charles-Ferdinand University), and worked there until 1912, when he moved to Zurich.

Prague is also known as the home city of **Franz Kafka** (1883-1924), a German-speaking Jewish novelist and short story writer. As a young man, Kafka attended the German branch of the then Charles-Ferdinand University, where he studied to become a lawyer. Kafka's birthplace is located

close to the famed Old Town Square, only a few steps from his alma mater's two main historical buildings - Carolinum and Clementinum.

Finally, another prominent Czech writer of novels, short stories and theatre plays, **Karel Čapek** (1890-1938), was also a student at Charles University. It is not widely known that the word "robot", which has by now become international, was introduced by Čapek in his 1921 play *R.U.R. (Rossum's Universal Robots)*. The word is derived from the archaic Czech word "robota," meaning "labour" in English.

ABOUT CHARLES UNIVERSITY



our charles university, our top level institution

Founded in 1348 by Charles IV, Charles University is one of the oldest universities in the world. Following the example set by the first European universities of Bologna and Paris, Charles University achieved its international renown soon after its establishment.

To date, it is still regarded as a prestigious, modern, dynamic and cosmopolitan education institution of high standing that receives global acclaim. Based on the international rankings, Charles University

is the largest, most renowned and the best-rated Czech university. According to the respected international database called Web of Science, Charles University is the most powerful scientific institution in the Czech Republic. Scientific research is an indispensable part of the activities of our Uni, whose key priority is to further enhance its prestigious position as a research university. There is a number of top research teams cooperating with foreign institutions, and students of

all the independent faculties are encouraged to engage in scientific and research activities. For many years our university has been keen to incorporate the results of its research and development into its teaching, and to ensure the greatest possible involvement of research staff and students in Czech and international projects. Of all Czech universities, Charles University has the highest number of non-native students (currently more than 9,000). Most of them are international students

coming from all over the world, notably from the UK, Scandinavia, Spain, North America, and Asia. The university places emphasis on developing inter-university cooperation based on a growing network of bilateral agreements. Currently the network includes almost 200 partner universities on all continents, and the cooperation is carried out on a number of levels, from shared scientific projects to seminars and summer schools.

GET INVOLVED, MAKE HISTORY

Charles University had the full number of faculties of a proper medieval university already in the 14th century. Back then, the gateway to the study of law, medicine, and theology was the Faculty of Liberal Arts, later called the Faculty of Arts. Lectures in mathematics, physics, and astronomy were part of the usual programme of study, and the teaching was largely based on the treatises of classical and medieval authorities, predominantly those by Aristotle. Among the leading figures was a 15th century naturalist Jan Ondřejův, known as Šindel, professor of Astronomy and Mathematics and the author of Prague's famous Astronomical Clock. The late 16th and early 17th centuries, particularly the period of reign of Emperor Rudolph II, saw most favourable conditions for the flourishing of scientific research in Prague. In 1599, Danish astronomer Tycho Brahe temporarily settled here, later inviting Johannes Kepler to join him. Kepler spent twelve years in Prague and formulated his first two laws here. During the Jesuit era, Charles University was annexed to the Jesuit academy in Clementinum and renamed Karl-Ferdinand University in 1654. As a result, the chief educational emphasis of the university shifted from the development of practically oriented disciplines to the education

of new ecclesiastic intelligentsia, resulting in an almost one-hundred-year decline in the study of natural sciences. From the mid-18th century, the Jesuit influence on education was gradually becoming weaker as the position of the Jesuits was fading. In 1773 it ceased altogether. One of the pioneers of the educational reform of the day was professor of mathematics and head of the Clementinum observatory, Joseph Stepling. He promoted the study of Newtonian physics and experimental research and was the first Czech mathematician to produce a methodic explication of differential calculus. During Stepling's lifetime, the Clementinum observatory commenced its first systematic meteorological observations, which are carried out to the present day. The most prominent mathematician and philosopher active in Prague during the first half of the 19th century was Bernard Bolzano, a professor of religion at Charles University in the years 1805-1820. For many years, the eminent physicist and mathematician Christian Doppler was a lecturer at the Prague Technical University. In the years 1867-1895, a famous German physicist Ernst Mach lectured at the Prague university, where he succeeded in establishing a real physics institution that later trained several

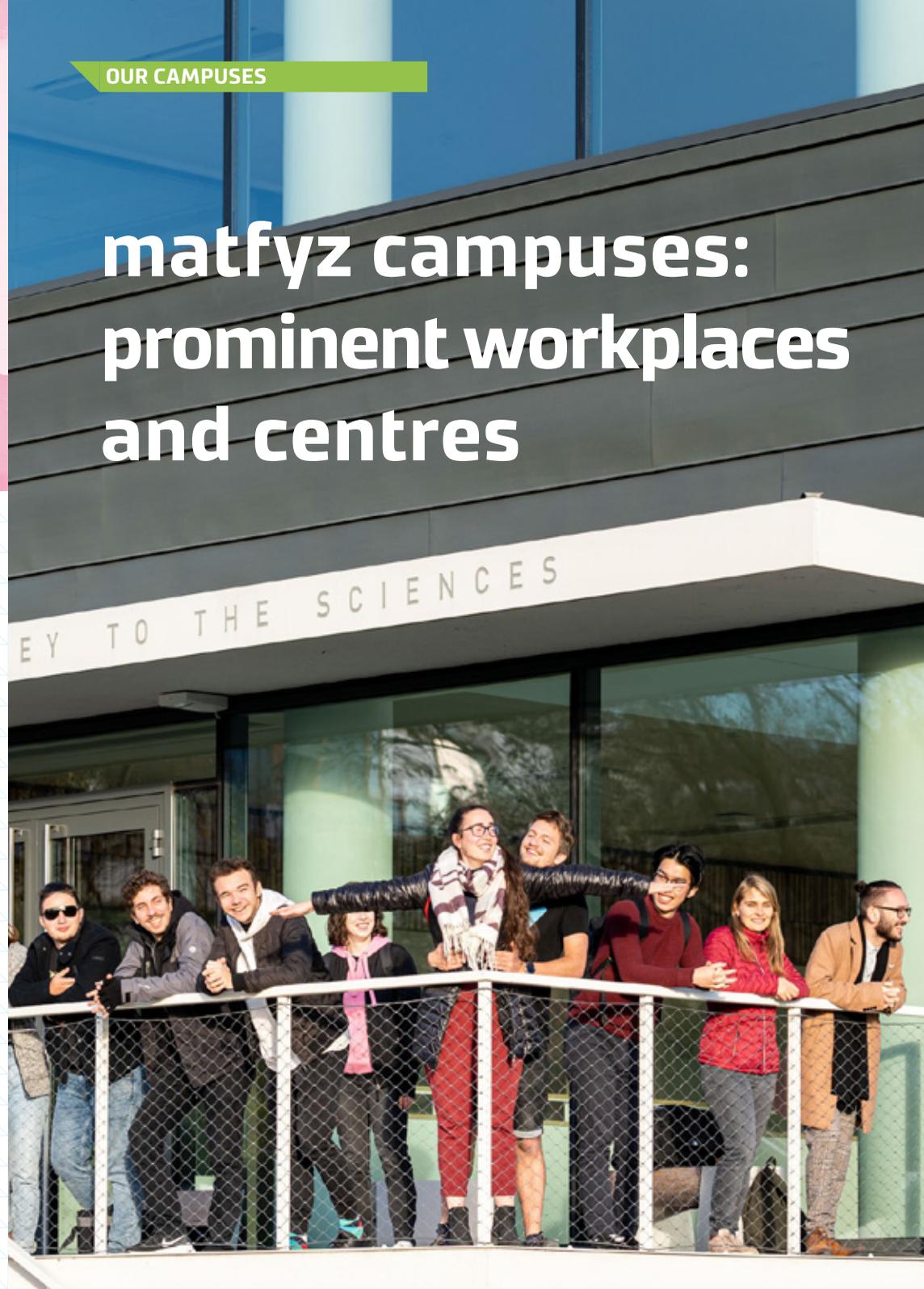




matfyz campuses: prominent workplaces and centres

prominent Czech professors of physics. In 1882, the university was divided into the Czech and German branches, which led to an increase in the number of professor and assistant positions, and to the overall improvement of research possibilities. The upsurge in the field of physics preceding the WWI particularly reflected on the German part of the university. In 1911, the Institute of Theoretical Physics was established, and, in the years 1911-1912, it was even led by Albert Einstein. In 1920, the university's name was restored back to Charles University, and that same year the Faculty of Natural Sciences separated from the Faculty of Arts. The Faculty of Mathematics

and Physics (commonly abbreviated as Matfyz) has been functioning independently since 1952. Today, the Faculty provides education for more than 2,200 students in fields of computer science (informatics), mathematics, physics, as well as in the teaching of these disciplines at elementary and high school levels. While the Faculty had always offered a range of courses in English, since the academic year 2013/14 fully English-taught Bachelor's and Master's programmes in Computer Science and Master's programmes in Mathematics and Physics have been introduced. Now it is your turn to get involved and make history!





KARLOV

The Ke Karlovu campus is the oldest Czech university institute of physics, and the current headquarters of the Faculty of Mathematics and Physics. It houses the Dean's Office, Faculty Administration, Academic Senate, Scientific Council, as well as some of the physics departments.



KARLÍN

This one-building campus located in Karlín is home to the Department of Mathematics. A branch of the Charles University library, which can also be found here, is famous for the unique printed materials stored in it (such as first editions of Newton's works).



PROFESSED HOUSE

Professed House is an important Baroque monument built in the late 17th century as a "professed house" of the Jesuit Order adjacent to the church of St. Nicholas. The Computer Science department resides here.



TROJA

The Troja campus is composed of several buildings, including: Heavy Technology Laboratories, Research and Development Workrooms, and the Cryogenics Laboratory. The majority of the departments belonging to the School of Physics can be found here, as well as a branch of the faculty library and the Department of Language Education. The campus was built specifically for the needs of the faculty at the end of the 1960s and 1970s. The designer of this campus was one of the most prominent Czech architects of the late 20th century Karel Prager (1923–2001). A part of the *Troja* campus is also a new-built building called IMPAKT providing students with the faculty library and multi-function auditoriums used for various workshops and meetings.





NEČAS CENTRE FOR MATHEMATICAL MODELING

This centre is a research platform whose primary role is to coordinate and support research and educational activities of several Czech-based research teams working in theoretical and applied mathematics (mostly in the field of continuum mechanics). The Centre was named after a world-renowned Czech mathematician Jindřich Nečas (1929-2002), who made seminal contributions to the theory of partial differential equations and to the mathematical theory in continuum mechanics.



MALACH CENTRE FOR VISUAL HISTORY

Malach Centre for Visual History (CVH) provides local access to the extensive digital archives of the USC Shoah Foundation - the Institute for Visual history and Education, the Refugee Voices archive of the Association of Jewish Refugees, and the testimonial collection of the Museum of Romani Culture in Brno. The Visual History Archive of USC Shoah Foundation contains over 50,000 witness testimonies covering the history of the entire 20th century. Users can search for and view desired testimonies by using more than 55,000 keywords or a database of 1.1 million names. The testimonies available in Malach Centre were recorded in 56 countries and in 32 languages.



The Ke Karlovu Campus

partnership programmes

Our current partners include:



Although Matfyz is one of the most important scientific institutions (it is currently generating around 6 % of the total scientific output of the Czech Republic), most of our graduates pursue practical careers in local or multinational companies. This is the reason why it has always been our priority to ensure that theoretical tutoring should meet its practical application.

have reached actual customers. To this day, hundreds of projects have been practically deployed, among them: NetBeans IDE (originally Xelfi), BIRD Internet Routing Daemon, Anaromina - online interactive learning platform for students of anatomy, Alex PTICs voice chat system, Authoritative DNS server Knot, and Justinian.

In our Software Project course, teams of four to six students work together for nine months to develop a nontrivial software product in the same way an actual IT commission for a real customer is normally affected. In the long history of this project, about half of the software products came into being not only as teaching assignments, but also as real commissions whose results

Furthermore, the Partnership Programme is a perfect way for our students to experience actual commissioned work already from the earliest stages of their university education. Apart from specifically targeted Software Projects and other short-term assignments, our students can choose to work on their Bachelor's and Master's theses in collaboration with some of our partners.

did you know...?

More than 40 % of the Internet peering centres use the BIRD routing server, a software that originated as a student project at our university.

The Czech Republic is one of the very few countries in the world where Google does not have a clearly dominant position on the search market. Its rival is the local Czech company Seznam.

Originally, Mathematics and Physics were taught at the Faculty of Arts. In 1920, they became part of the Faculty of Science's curriculum; independent Faculty of Mathematics and Physics did not exist until 1952.

A few years ago, Professors Nešetřil and Matoušek wrote a Czech textbook - Kapitoly z diskrétní matematiky, covering the material on which they had lectured within Computer Science programme. Since that time, the textbook has been translated and published in seven other languages, including English.

Matfyz participated in the development of the Solar Wind Analyser/Proton and Alpha Sensor (SWA-PAS) onboard the Solar Orbiter spacecraft.

The Computer Science building dates back to the 17th century and is located within just a few steps from Charles Bridge and Prague Castle.

Inside the Computer Science building, archaeological remnants of a round structure dating back to the 11th century were discovered in February 2004. The finding was identified as St. Wenceslas Rotunda, a monument of the duke of Bohemia that was believed to have vanished without trace for more than 370 years. Inside, a valuable fragment of original ceramic tiling was found, making it one of the most outstanding examples of Romanesque art in Bohemia.

A team from the Institute of Formal and Applied Linguistics made an AI translator called CUBBITT, which can compare to professional English human translators.

The cooperative team of Matfyz, Švandovo divadlo and DAMU worked on the first theatre play written by AI, which premiered on the 26 February, 2021.

Scientists from Matfyz collaborated on a project dealing with an AI system called DeepStack, which defeated professional poker players in 2016.

Minor planet 55844 Bičák was named after a notable graduate of Matfyz Jiří Bičák, who was also awarded by the Neuron Fund for his contribution to global science.

computer science revives history: artificial intelligence in kingdom come: deliverance (warhorse studios)



The AMIS Group (*Artificial Minds and Intelligent Systems*), a faculty-based group involved in the creation of *Kingdom Come: Deliverance*, a historical-fiction RPG based on the reign of king Wenceslas IV, has worked on the development of artificial intelligence for more than 10 years. In this video game, which was published in 2018, the AMIS group has significantly contributed to the field of artificial intelligence thanks to their work on an extremely true-to-life behaviour of the simulated environment promising a truly impressive gameplay experience.

Tomáš Plch, the AI lead programmer at Warhorse Studios, speaks about his studies at Matfyz and the ways in which the faculty has been helpful in developing this extraordinary computer game:

“The faculty provided me and my colleagues with the opportunity to start cooperating on the AAA game ‘Kingdom Come: Deliverance.’ In only a few months, my career skyrocketed from being a part-time researcher to becoming the AI Team Leader. I got the chance to design and implement the core systems for the Artificial Intelligence engine on which the game is currently running - and I am still improving it. One of the key advantages the faculty has given me is the theoretical background and practical skills I acquired while studying there. Not only did it make me a skilled C++ programmer, but also a researcher and a creatively-minded person. There is a shortage of skilled programmers (not only in the game development industry) and to my knowledge, the Faculty of Mathematics and Physics is one of the few institutions where programmers still count for something.”



charles games: the first academic private company in the Czech Republic

Charles University is the first university in the Czech Republic setting up a private spin-off company known as *Charles Games* to transfer knowledge and technology. *Charles Games* was originally an interdisciplinary working group composed of representatives of the Faculty of Arts and the Faculty of Mathematics and Physics CUNI. It was the collaboration of experts from different disciplines that formed the basis of the group's achievements.

Charles Games is behind award-winning games such as *Attentat 1942* portraying the Nazi occupation of Bohemia and Moravia during the second world war or *Svoboda 1945: Liberation* dealing with the unpleasant history taking place in Sudetenland in 1945. The historians from the Czech Academy of Sciences contributed to both creations greatly.

"The whole project started as an educational one. We initially developed the game as an educational simulation for high schools. The reason we got started was, at the time, there were not many innovative aids for teachers on how to teach contemporary Czech history - especially the second half of the 20th century, which is fundamentally shaping our pres-

ent. Then the game developed into a full-fledged video game, which is now being sold worldwide and not used (only) in an educational context anymore. It's a game you can buy on Steam and has won several awards. But I think video games are a great medium for telling stories, and capable of telling even the most serious and intimate human stories." (*Vít Šisler, an assistant professor in the field of New Media Studies; cited from Czech Radio*)

"Game development is interdisciplinary. The best foreign productions are by teams in which people of different backgrounds connect. And I want to interconnect these people in Czech Republic as well. That's why we have a computer science class where people from the Faculty of Arts, FAMU (Film and TV School of Academy of Performing Arts in Prague), VŠUP (Academy of Arts Architecture & Design in Prague), ČVUT (Czech Technical University in Prague), graphics, animators, sound engineers and programmers attend. When the skills intersect, something good can happen." (*Jakub Gemrot, a computer scientist from the Department of Software and Computer Science Education; cited from Forbes*)

university rankings

Academic Ranking
of World Universities 2021:

#201-300 overall rank;

#101-150 in Physics;

#101-150 in Mathematics

Times Higher Education World
University Rankings 2021:

#401-500

QS World University Rankings 2021:

#260 overall rank;

#151-200 in Mathematics;

#201-250 in Physics

Charles University is consistently ranked
as the **#1** Computer Science university
in the Czech Republic



OUR ALUMNI

our alumni: count on us

Our graduates successfully pursue professional careers after graduation or proceed with their education on doctoral and post-doctoral levels in the Czech Republic and abroad.

Choosing the right place to study is never an easy task and relies on a number of important factors. Curriculum and choice of subjects, quality of education, tuition and living costs, and the academic environment are all equally significant aspects to consider before making your decision. Perhaps one of the most important questions is how well the university of your choice can prepare you for your future career, and what are the prospects for employment after you graduate. According to the statistics, the unemployment rate among Matfyz graduates is 0%. Unemployment is simply an unknown concept to our alumni since, for the most part, they do not have to search laboriously for potential employers, but, rather, are free to directly choose the job that is most attractive for them. Why is this so?

A great number of our alumni have established themselves in important careers and leadership positions in large, well-respected companies such as Google, Facebook, IBM, Avast, Deloitte, Ernst&Young, and others. Many of our graduates have also succeeded in establishing new, creative, and efficient businesses in the spheres of commerce, banking, and software development. Some of our former students have continued with their education in graduate schools at universities such as Stanford, MIT, Cambridge or Warwick. Of course, the achievements of our students and alumni do not solely depend on the quality of our education and their success is rather a matter of their personal diligence and creativity. Nevertheless, you may find it of interest to read some of our graduates' thoughts on the level of education, possibilities for future employment, and generally on their studies at our faculty.

“Matfyz provides its students with quality training for their future employment.”

Jiří Fialka - Member of Executive Board, Ceska pojistovna a.s. & Generali pojistovna a.s.

“Matfyz provided me with much knowledge and experience, taught me to think analytically and to approach problems systematically, thanks to which I can solve even the most difficult tasks.”

Jakub Jermář - Software Engineer, Avast

“The knowledge and skills I acquired at Matfyz helped me immensely in getting accepted to a Master’s programme in Machine Learning at University College London, one of Britain’s top universities, and later to do my PhD in Cambridge.”

Evelína Gabašová - PhD student, University of Cambridge

“One meets a lot of clever and determined people at the faculty and therefore Matfyz is an ideal place for ‘networking’.”

Larysa Aharkava - Software Engineer, Google

“Matfyz is commonly considered as very hard to graduate from, perhaps because the students are always required to know the ‘whys’ in addition to the ‘hows’.”

Daniel Král’ - Lecturer, University of Warwick

“Studying there exceeded my expectations by far. The level of education at Matfyz is comparable to the best universities in the world.”

Stanislav Živný - Associate Professor, Department of Computer Science, University of Oxford

“I spent eight happy years at Matfyz. Later, I received my PhD in applied mathematics from the Massachusetts Institute of Technology, and then I worked at Microsoft Research, Princeton University and IBM Research. Looking back, I would say that undergraduate training at Matfyz is comparable to top-level institutions in the United States.”

Jan Vondrák - Research Staff Member, IBM Almaden Research Centre



Sebastian Schimper (private archive)

Dear new international students,

I am a German who recently graduated from the faculty where your journey is about to embark. During my studies there, especially during my first semester, I was asking myself whether studying at CUNI MFF would be „worth it“ multiple times. Now that I have graduated, I can confidently answer this question with a big, capitalized YES, and I do believe that a successful completion of the study program you have applied for, can make the difference for you, too!

I do not want to lose many words about the material value of the education you are about to receive, because you probably heard of it already. What is worth mentioning is that – due to the reason that a degree from Matfyz is highly respected throughout the Czech Republic and maybe even beyond – I was able to find a respectable job I like doing without much difficulty.

In my personal, subjective opinion, the real value of the education at Matfyz is a positive influence on how you perceive your surroundings. As an example, I studied Computer Science and specialized in Computer Graphics, and I learned a lot about Physically-Based Ren-

dering. This process is the algorithmic computation of images with a high degree of physical realism by imitating real-life natural behaviour. All the knowledge you will receive here at this faculty is without any doubt useful. And analytical problem-solving skills are not only useful for your future job. You can apply them to solve a lot of other problems in your everyday life, too!

One of the strongest „unique selling points“ of this faculty in my opinion is the relationship between the students and the teaching staff. It is great to get taught by top-notch scientists, who are responsible for the newest contributions to science and technology. Apart from that, some of the professors I had were very close to the students. I felt that these relationships with these professors were as close to friendship as a relationship between a student and a teacher could possibly be. I used to shake my fist at teachers in general since Middle School, however, now some teachers at this faculty became my role model to which I still look up to.

As mentioned before, I am positive that you made a good decision by enrolling in Matfyz. This time will

become a part of you, and you will carry the time in Prague with you for the rest of your life.

One last thing:

I strongly believe that you don't need to be geniuses to survive at Matfyz. I believe that studying and doing the work that is demanded from you is crucial for your academic success. Lastly, remember to have fun, and

do things you like, and as a suggestion, maybe find out why Prague is deservedly called „one of the world's most beautiful cities“. There are things that are more important than sorting algorithms and differential equations, and your mental health is one of these things.

I wish you all the best!

Sebastian Schimper

Dear new international students,

My name is Zeynab and I am a first-year PhD student of quantum optics and optoelectronics. I finished my master's degree in my homeland - Iran. After that I had several offers to study PhD abroad such as from Leeds University in the United Kingdom, but I decided to study here. The reason was that I loved the subject of my thesis and my future supervisor from Matfyz. Moreover, Prague is one of the most beautiful capitals in Europe. I truly enjoy studying and living here.

In my eyes, Matfyz is a highly alive and active faculty. If you walk into the building, you can see there are plenty of young students discussing and studying together. I love to see

how they are devoted to science. Besides this lively environment, the classes and facilities are of high quality, and professors behave friendly and are willing to help. Furthermore, the laboratories are compatible with high-ranked universities. This is important for students who want to do a scientific project, because if you lack the facilities, the results of your research may not be satisfactory even though you work hard. I recommend to students to always double-check if their desired university has a good laboratory.

Apart from the university's role, the students themselves should try hard. I have already managed



Zeynab Sadeghi (private archive)

to work on several projects, and I wrote several scientific papers. It may be time-consuming, hard, and perhaps difficult. But I want to encourage young students to not be afraid of doing science projects, because through a project you best learn how to think, analyse, and solve a problem. I perceive it as a way to grow.

Last important thing to mention is gender equality at Matfyz. I have never ever faced a situation when someone treated me disrespectfully due to my gender or nationality. That's another reason why I like Prague and the university. I am happy that I chose the right university and I hope you, new students, will enjoy it as well.

Zeynab Sadeghi



study mathematics, physics and comp-sci at matfyz

WHY STUDY MATHEMATICS AT MATFYZ?

At our faculty, we lay great emphasis on leading our students toward deep understanding of the studied material, so that they are able to creatively adjust the known methods and techniques to solve tasks independently. To this end, the focus on mathematics teaches our students not to fear any seemingly complex task. Students know how to divide them into simpler, smaller tasks which they will then resolve step by step. By studying mathematics, students will learn to think analytically and accurately, and will refine their logical deduction - these are precisely the skills for which our graduates are most highly valued among potential employers across a wide range of professional fields. Only a small number of our graduates, however, become professional researchers and academics who rely solely on mathematics in their career. Most graduates pursue careers in fields different from that of their studies, nevertheless they use their knowledge of mathematics and

skills of logical thinking on a daily basis. Because of this, the areas in which they find employment are extremely diverse. Our former students work in banks, insurance companies, and financial institutions; solve complex tasks for large international corporations; analyse and programme complicated computer systems; or engage in trade and business.

As a student of mathematics at Matfyz, you will have considerable freedom in selecting the projects that interest you the most and on which you will focus. There are short-term summer projects that you may choose to contribute to, and a number of specialised seminars which require working on specific tasks commanded directly by big companies. Therefore, apart from gaining invaluable experience, you will already be able to make contacts with potential employers in the early stages of your studies. A wide range of possibilities to study abroad is also available since our faculty has established



many agreements with international universities in Europe and beyond.

WHY STUDY COMPUTER SCIENCE AT MATFYZ?

To get a truly valuable and high-quality education that will pay off, you need to gain solid foundations on which you will be able to build on in the future. Just as we first learn how to walk and only later how to run, the same applies to our programme of computer science in which we first aim to teach our students the basics very thoroughly. Our goal is not to teach the students how to solve conventional tasks that were previously covered and explained in the lectures, but to guide and support them on the way toward finding their own creative solutions and to make sure they know how to handle real-life tasks that await them in their future. For this reason specifically, our computer science students can be employed in any area of IT immediately

after graduation. In our curriculum, we put a great emphasis on ideas and concepts that have stood the test of time and that will endure. This is the reason for the inclusion of many classes of mathematics.

Perhaps you are not yet sure whether you would prefer to study programming in Windows or Linux. Maybe you would like to try out both. Or you would possibly like to work with databases. Potentially also with networks? Would you like to create a computer game with stunning graphics? Or is inventing algorithms your greatest passion? Everybody is different and has their own tempo. That is why we try to organize our teaching in a way that gives you the flexibility you need, to let you choose your own preferred specialisation, and even to shift your focus freely during the time of your studies. At Matfyz, you will find the utmost freedom to select the projects on which you would like

to work. Not only can you choose from a number of existing research topics, but you can also come up with your own creative project. Are you interested in robotics? Then you can try and build your own robot during a project called *The Robotic Day*. Have you always wondered about how software for planes and cars is programmed? You can try it out by yourself as a part of the *LEGO Mindstorm* project. Are you more curious about artificial intelligence? Computer graphics? Operating systems? Translators or computer linguistics? At Matfyz, we teach all these and much more!

WHY STUDY PHYSICS AT MATFYZ?

Do you want to explore the Higgs boson, discover a new high-temperature superconductor or develop state-of-the-art devices for diagnosing and treating malignancies? At Matfyz, physics is taught by experts who also conduct cutting-edge physical research in many fields. In our belief, the physical world view is gradually evolving. With a good knowledge of mathematics, you will know how to adapt methods and theories to these changes. What are our three major pillars? Firstly, *fundamentals* - a solid foundation is needed for a high-quality education. Physical theories do not change with a jump, so it's certainly not a waste of time to learn Newtonian physics first and Einstein's general relativity later. Secondly,

coherence - at Matfyz, we do not make you learn everything by heart. Instead, we point out the context, so you can answer not only "what," but also "why" questions. Finally, *initiative* - we do not teach to solve assignments in a pre-explained way. We encourage you to find your own solutions so that you can cope in situations, where the problems and their solutions cannot be found in the textbook.

Our programmes of physics cover a wide spectrum of modern disciplines ranging from highs of *Meteorology and Climatology* to depths of *Particle and Nuclear Physics*. You can also study important fields such as *Condensed Matter, Material Sciences, Surface and Plasma Physics, Biophysics* or *Optics and Optoelectronics*. What can you expect after graduation you ask? Mathematical knowledge and the ability to apply it in practice are highly sought after by employers. So, unemployment is a virtually unknown concept to our graduates. Physicists from Matfyz regularly receive the highest ranking of scientific research throughout the Czech Republic and abroad, and our graduates successfully use their experience in practice. More research-oriented students can either stay in academia or go to do research in many diverse companies.

→ compsci-math.cz

english study programmes

bachelor's programme

BACHELOR'S DEGREE IN COMPUTER SCIENCE

The Bachelor of *General Computer Science* study programme is intended for students who would like to learn the lasting foundations of computer science and to become proficient in its methods and approaches. The programme usually takes three years and is concluded with a state final examination. The degree is accredited by the Ministry of Education, Youth, and Sports of the Czech Republic, and is internationally recognized.

In the first year, basic mathematics courses (*Mathematical Analysis I and II, Linear Algebra I and II, Discrete Mathematics, Combinatorics, and Graphs*), and introductory courses to programming and computers (*Programming I and II, Principles of Computers, Introduction to Networking, Algorithms and Data Structures, Introduction to UNIX*) are taught. During the second year, students further develop their knowledge of mathematical theory (*Mathematical Analysis III, Propositional and Predicate Logic, Prob-*

ability and Statistics), as well as theoretical basics of programming and computers (*Algorithms and Data Structures II, Optimization Methods, Non-Procedural Programming, Automata and Grammars, Database Systems*). In the second year, students are required to attend courses of practical programming (choosing one of the following courses: *Programming in C++, Java, C# Language and .NET Framework*), and to present an *Individual Software Project*. Students are also obliged to gain credits in other elective courses according to their individual needs and interests. In the third and final year, students are expected to work on their Bachelor thesis and only one additional mathematics course (*Algebra*) is recommended.

ORGANISATION OF STUDIES: SEMESTERS, LECTURES, EXAMS

The academic year is divided into two semesters – the winter semester starting in October and the summer semester starting in February. In each semester, there are 13 weeks of

teaching followed by a five-week examination period. The courses mostly consist of lectures and classes. While lectures cover the theoretical bases of the individual subjects, their practical applications are further explored in classes. The duration of most courses, both lectures and classes, is 90 minutes once or twice a week. Attendance of lectures and classes is usually not

obligatory but is strongly recommended. Students are usually evaluated at the end of the semester. The conditions for obtaining course credits depend on the nature of each course, some requiring a written test, other programming an application or writing a course paper. Most exams are taken during the 5-week examination period and can be both oral and written.



master's programmes

Within our Master's programmes, students are given a broad overview of their preferred field of study. The courses are specifically designed to encourage students' independent thinking, to enable them to distinguish between important and marginal tasks, and to teach them to easily accommodate the rapidly evolving new technologies. Master's degrees at Charles University usually require two years of study and are concluded by a final state examination together with master's thesis defense (viva), after which all successful candidates are granted the title of "Master of Science."

MASTER'S DEGREE IN COMPUTER SCIENCE

Three major specialisations are currently available within the English-taught Computer Science programme: *Theoretical Computer Science*, *Mathematical Linguistics*, and *Discrete Models and Algorithms*. The study programme is very flexible, and students can customize their set of attended courses based on their particular interests and needs. In the first year, basic courses such as *Data Structures* and *Theory of Complexity and Computability* are mandatory for all students regardless of their specialisation. Students of *Mathematical Linguistics* are fur-

ther required to attend courses on natural language processing and statistical methods, as well as to begin their work on a software group project. Students specialising in *Discrete Models and Algorithms* attend courses on combinatorics, graph theory, and optimization. In the second year of their studies, Master's students select a set of desired courses from the optional courses list to construct their own individual schedules. These are based on the students' specialisation within the programme, as well as on their study plan. We currently teach courses on artificial intelligence and its sub-areas, such as machine learning, planning, declarative programming, and neural networks, several linguistics courses, courses on speech recognition and machine translation, courses on optimization techniques (non-linear, combinatorial, multi-criteria), integer programming, mathematical structures, algorithms and their complexity, as well as approximation and probabilistic algorithms. Certain students may prefer to attend some of these courses already in their first year, so that in their second year they can fully focus on the completion of their master's thesis.

Specializations: Artificial Intelligence, Discrete Models and Algorithms, Language Technologies and Computational Linguistics, Software and Data Engineering, Software Systems, Theoretical Computer Science, Visual Computing and Game Development

MASTER'S DEGREE IN MATHEMATICS

The Master's programme in Mathematics leads the students to achieve deep and solid understanding of higher mathematics. It is specially designed to encourage analytical thinking, creativity, and comprehensive understanding, as well as to develop students' ability to apply mathematical methods to real-life tasks. Graduates find employment not only at universities and research institutes, but also in banks, financial and insurance companies, pharmaceutical industry, software industry, marketing, or telecommunication companies. A number of specialisations ranging from pure abstract mathematics to its applications in various fields are available in the English-taught Mathematics programme on MA level.

Specializations: Mathematical Structures, Mathematical Analysis, Computational Mathematics, Mathematical Modelling in Physics and Technology, Probability, Mathematical Statistics, and Econometrics, Fi-

nancial and Insurance Mathematics, Mathematics for Information Technologies

MASTER'S DEGREE IN PHYSICS

The Master's programme in Physics offers several specializations. Particle physics investigates the structure of matter on the level of elementary particles and their fundamental interactions. Nuclear physics studies the structure of atomic nuclei and more generally the behaviour of finite quantum systems of mutually interacting particles. Atmospheric physics offers a comprehensive study of meteorology and climatology, including courses in weather and climate modelling, numerical flow simulation or air quality modelling. Surface and plasma physics is an extensive and interdisciplinary discipline that includes a fundamental knowledge about the motion of neutral and charged particles in all states and their interactions with a particular medium. Physics of Condensed Systems and Materials is devoted to experimental and theoretical study of properties of solid state such as bulk or thin layers of metals, semiconductors, or dielectrics, their microphysical interpretation and application possibilities, especially regarding the current development of materials research. Considering that a vast range of modern applications is achieved



in solid state systems and devices, their understanding is one of the keys to applied physics. Optics and optoelectronics cover methods and investigation of generation, manipulation, and detection of electromagnetic radiation, mainly in the form of laser light, broad-band visible and terahertz radiation or ultrafast optical pulses. Biophysics and Chemical Physics lies at the interface of physics, biology, and chemistry. The graduate will gain knowledge of quantum theory and statistical physics of mol-

ecules and molecular systems, from experimental methods of biophysics and chemical physics, especially optical and other spectroscopic methods, structural analysis, and imaging techniques.

Specializations: Particle and Nuclear Physics, Atmospheric Physics, Meteorology and Climatology, Surface and Plasma Physics, Physics of Condensed Matter and Materials, Optics and optoelectronics and Biophysics and Chemical Physics.

admission

The goal of the admission procedure is to determine the applicants who have best shown the capabilities and diligence expected of all Charles University students. If you are from outside the European Union and the Schengen Area, we strongly advise you to start the admission procedure well before the deadline to have enough time for obtaining a student visa or a long-term residence permit for studying in the Czech Republic. Please note that the visa process can take up to 90 days.

BACHELOR'S ADMISSION REQUIREMENTS

To be admitted to English-taught Bachelor's programmes at our faculty, you are required to:

1. **hold or be currently working towards a *School Leaving Certificate* confirming the fulfilment of the requirements of secondary education in your country of residence,**
2. **meet the Reasoning Requirements,**
3. **provide sufficient proof of English Language Proficiency, this can be demonstrated by providing your results in one of the standardized English tests that we recognize (see www.compsci-math.cz for details or possible exemptions).**

MASTER'S ADMISSION REQUIREMENTS

To be admitted to English-taught Master's programmes at our faculty, you are required to:

1. **hold, or be working towards a Bachelor's or Master's Degree, and be able to provide a certified copy thereof; in cases required by law, a certification of equivalence of education must accompany the application,**
2. **have sufficient academic background in the relevant fields (see www.compsci-math.cz for details),**
3. **have sufficient command of the English language; this can be demonstrated by providing your results in one of the standardized English tests that we recognize (see www.compsci-math.cz for details or possible exemptions).**
4. **In the case of Computer Science programmes, the additional requirement is a completion of a take-home assignment, of which deadline for submitting is 31 May.**

All applicants are most welcome to accompany their application by a personal statement describing the reasons for applying for the proposed programme, their academic background and research

interests, as well as future career plans. Letters of recommendation as recent as possible from professors or employers who can comment on your recent professional accomplishments and your qualifications for pursuing Master's degree in mathematics, physics, or computer science are also highly recommended.

HOW TO APPLY

1. TAKE ONE OF THE STANDARDISED ENGLISH LANGUAGE PROFICIENCY TESTS (TOEFL, SAT, ACT, OR OTHER) AND SUBMIT YOUR RESULTS

Applicants must complete their standardized tests in time. The full list of recognized English language proficiency tests is available on our website.

2. ENSURE THAT YOU HAVE ALL THE REQUIRED DOCUMENTATION AND INFORMATION AT HAND, INCLUDING:

- a) personal details (your full name, date and place of birth, citizenship, permanent residence address, address for correspondence, email address, passport number),
- b) name and address of your secondary school,
- c) *School Leaving Certificate* and any related documents,
- d) your standardised test results.

P.S. Please note that all required documents must be physically delivered

For detailed information about the admission procedure, application deadlines, and a full list of requirements, please visit our website www.compsci-math.cz, or contact our Admission Office at info@matfyz.cuni.cz.

to the Department of Student Affairs of the Faculty of Mathematics and Physics preferably by 30 June, and by 30 September, at the latest. If you do not deliver them as required, you will be neither accepted nor enrolled for your studies.

3. FILL IN THE ELECTRONIC APPLICATION FORM

To submit an online application, please follow the link with instructions accessible through our webpage compsci-math.cz in the "Admission" section. Please note that the PDF file with your details is generated automatically from the online application and is for your reference only. Please do not send it to us.

4. SUBMIT YOUR APPLICATION ONLINE

Make sure to upload all the required documents as specified above along with your application. For TOEFL, SAT, ACT, and IB tests, please arrange to

have your test results sent directly to Charles University in Prague, Faculty of Mathematics and Physics. Our institution code for TOEFL is 3184. The application deadline is 30 April.

5. WHAT HAPPENS NEXT?

After submitting your completed application, you will receive a letter of acknowledgement by email. The admission committee will then

carefully consider all applications in order to select candidates best suited for admission to each of the programmes. If your application is successful, you will receive a letter of acceptance and an information pack explaining the next stage of the admission process. If the application is not successful, you will also be addressed in writing.

costs & benefits

ENJOY AFFORDABLE COSTS

Annual tuition for all Bachelor's and Master's programmes:

- EUR 3,400 for EU students
- EUR 5,700 for non-EU students
- The average monthly cost of living is around EUR 600 including accommodation, food, public transportation, and leisure activities.
- The application fee for all programmes and applicants is CZK 830 per application and is payable online.

LEARN CZECH AND STUDY FOR FREE

Learning to speak a new language is always exciting and can have some great advantages. Aside from helping you to extend your linguistic capabilities and make you blend in with the locals more easily, learning Czech can also exempt you from paying international tuition fees. All students enrolled in Czech-language study programmes at Charles University study entirely free of charge! To ensure that everyone gets an equal chance of free education, the university offers a great variety of preparatory Czech language courses. From intensive and short-term courses to year-long programmes

and summer schools, foreign students can choose to study in some of the most beautiful parts of the Czech Republic. Are you keen on learning Czech but cannot take one of the certified courses on site? Enrol in one of the official tutor-assisted e-learning courses online! **To learn more about the range of available courses, visit www.ujop.cuni.cz.**

TAKE FULL ADVANTAGE OF THE BENEFITS WE OFFER

Having enrolled as a full-time student at our university, you will be fully entitled to enjoy all the benefits offered by Charles University. All of our international students are completely eligible for scholarships, stipends, project and research grants, as well as for various other bonuses.

UNIVERSITY SCHOLARSHIPS AND GRANTS

The Faculty of Mathematics and Physics supports its best students through several scholarship programmes. The most relevant for our international applicants and students are the following:

- Computer Science Tuition Fee Scholarships for the Bache-

lor's Programme in Computer Science;

- Computer Science Tuition Fee Scholarship for the Master's Programme in Computer Science;
- Prague Mathematics Tuition Fee Scholarship for the Master's Programme in Mathematics;
- Prague Physics Tuition Fee Scholarship for the Master's Programme in Physics;
- Computational Linguistic Scholarships for the Master's Programme in Computer Science - Language Technologies and Computational Linguistics;
- Scholarship for Outstanding Academic Achievement.

ERASMUS+ STUDY ABROAD PROGRAMME

Through the LLP/Erasmus+ programme (Lifelong Learning Programme/Erasmus+), several hundred students each year are enabled to travel from Charles University for a study period abroad in another European educational institution. The programme is open to all students who are enrolled in an accredited study programme at Charles University at bachelor, master, or doctoral level, and remain properly enrolled as students at Charles University throughout the period of their study abroad. In recent years, more than



1,500 bilateral agreements have been prepared for our students, covering over 2,000 places for one - or two-semester study periods abroad. These include destinations in all the countries that have joined the LLP/Erasmus+ programme.

GET MOVING

Sports activities are available to all Charles University students free of charge. *The Department of Physical Education* offers 18 different sports to choose from, ranging from team sports to adventure sports. These include basketball, badminton, football and floorball, squash, judo, Pilates, swimming, but also in-line skating, climbing, and canoeing. Because most Matfyz students prefer activities involving a net, we also have our own tennis and volleyball courts. Regardless of what sport you choose, you are welcome to join our facul-

ty's *University Sports Club* and try to beat the records!

GO OUT AND SEE THE WORLD

Because at Charles University education and research go hand in hand, our students are encouraged to attend academic conferences and present their research. Every year, the Faculty of Mathematics and Physics organises a number of student conferences, international academic conferences and symposiums, and lectures by visiting academics from all over the world. Our students are not only welcome to take part in all the above events, but their own academic activities at home and abroad are very much encouraged. Charles University aims to financially support student academic and research activities from short study visits and longer research stays to participation at conferences and publishing of their research results in academic periodicals.

TEST YOUR POTENTIAL EMPLOYERS

Excursions to international companies such as IBM and Google are organised annually by the Faculty of Mathematics and Physics for all interested students. Are you considering a career in one of these corporations in the future? Or would you perhaps like to try it out and decide later? Or even make some money while working on something that really interests you? Good news! Our fac-

ulty offers many internship positions in companies such as IBM to its students, even at undergraduate level. Best internship attendees may also apply for paid positions in trainee programmes at IBM and become specialists in the areas of their choice. International students especially have a good chance of finding their way to one of 10 IBM research labs abroad (especially Haifa, Israel; Zurich, Switzerland; and Dublin, Ireland), where they can also become research internes on paid positions.

MENTORING PROGRAMME AT CUNI MFF

Mentoring is a professional relationship between a student (mentee) and a mentor, where the junior participant can benefit from the experience, skills, and contacts of the mentor. Mentoring serves to fulfil a clearly defined goal and has a time limit. The mentor acts as a guide in a particular field or topic area and their task is to develop fundamental skills of the mentee. Using specific problems, they demonstrate approaches, which have and have not worked in their praxis, or alternatively, which solutions they would pick if they were in the mentee's position. The environment, where the exchange takes place, is natural and one that the partners agree on. For an university student, the pro-



gramme represents a unique opportunity to, while still studying, more closely familiarize themselves with the work environment of the field that they want to pursue in the future. They can gain valuable contacts and jumpstart their career. A student of any year or subject at Matfyz can become a mentee.



contacts

GET MORE INFORMATION

For more information about studying and living in Prague, please visit our website: compsci-math.cz

FEEL FREE TO CONTACT US DIRECTLY

If you have any queries regarding our study programmes or the admission procedure, please contact
The Student Affairs Department
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matfyz

