Study at AGH-UST

A guide for international students
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Krakow, Poland

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About AGH UST

AGH UST is one of the best, most renowned and modern Polish universities, for years holding top positions in the press ratings of state technical schools of higher education. It is a leading Polish university in the field of modern technologies, rated highly on the international arena. The university’s popularity is also determined by its long and rich traditions – since the early days, i.e. for over 90 years, the university has been educating the most-needed engineering specialists in Poland. AGH UST also has other assets, such as an ideal location in the most beautiful Polish city of Krakow, a campus which is convenient for the university buildings and provides comfortable accommodation to over nine thousand students, a modern teaching and research base and laboratories with the latest equipment, numerous facilities for students with disabilities, as well as unique atmosphere of studying. AGH UST also maintains and constantly develops collaboration and co-operation with other universities in Poland and abroad.

At 16 faculties and in 13 Education Centres outside Krakow there are about 36,000 students at full-time and part-time courses. The university also runs doctoral studies (nearly 700 students at 11 faculties) and post-graduate courses (over 3,000 students).

Students receive education in 51 disciplines and over 200 specializations. The diversity of disciplines is worth emphasising. The university offers unique, often interdisciplinary studies which can be tailored to individual needs. Such modern technical courses educate individuals of uncommon intellectual potential.

Every year, the university launches new courses, whose programmes take into account the needs of the labour market, which arise from the eco-
nomic transformations and the demand for highly-qualified specialists. Together with traditional faculties, closely connected with mining and metallurgy, the university also has faculties focusing on such branches of science as information technology, telecommunications, automatics, robotics, new materials, technical physics, applied mathematics, as well as management and sociology. The AGH University of Science and Technology is a special place of unique atmosphere and 90 years of colourful history; it is a place of ideas, successes and friendships for life.

**About Centre for International Students**

The Centre for International Students was established in 2011 with staff from the Department of International Relations and the Department of Education in order to provide international students with help and assistance they may require.

We pride ourselves on providing services of the highest standard, from answering questions about application procedures to helping international students with everyday matters such as legalizing their stay, obtaining scholarships, and others.

We help both full-time international students, as well as exchange students.

You can contact us by e-mail or phone:

e-mail: international.students@agh.edu.pl
phone: +48 12 617 50 92, +48 12 617 46 15
Becoming an exchange student

For students interested in short-term courses at AGH UST (up to one year in length), we have a variety of international exchange programmes. The most popular ones are Erasmus and SMILE, as well as various bilateral exchange programmes with universities from all over the world.

Requirements

The most important requirement you need to meet is a bilateral agreement signed between AGH UST and your home university. It can be a bilateral agreement signed within the framework of a particular programme (such as Erasmus or SMILE) or a general bilateral agreement. To find out if your university has signed an agreement with AGH UST, you can consult your International Office.

If there is no bilateral agreement between the universities, you can initiate the process of signing one – it is an easy process which the Centre for International Students can help you with. Simply email us with all the necessary information and we will do our best to help.

If a bilateral agreement has been signed, you can apply for a place as an exchange student at AGH UST.

Necessary documents

To apply for a place as an exchange student you need to provide the following documents:

- **Application Form** (to be filled in online – you can find it at our website) – It is the most basic step in your entire application process. An incorrectly completed application form may mean your application will
not be processed and registered. Please make sure that all the information you provide is correct.

- **CV in English**
- **Photocopy of your passport/ID** – the page with your photograph and personal information
- **Certificate of your proficiency in English (minimum B2 level according to CEFR)** – all internationally recognized certificates will be accepted. In case you cannot provide us with an official certificate we will also accept an official letter from your home university stating you meet our language requirements.
- **Transcript of records** – for the last academic year

All documents can be sent by email, alongside a statement informing us what fields of study you are interested in.

Students interested in writing their final project or a master thesis at AGH UST should also include a **covering letter** together with other documents.

At the same time, your home university should send in an official nomination letter stating you are qualified for an international exchange programme. The nomination letter can be sent via email as well.

**Deadlines**

Students need to send in the required documents by the following deadlines:

- **30th June** – for students who want to study at AGH UST in the winter semester (usually October – February) or for the entire academic year,
30th November – for students who want to study at AGH UST in the summer semester (usually March – July).

Application process

Once you have sent in all the documents, they will be processed and registered by the Centre, and then forwarded to the faculty that matches your required field of study and interests best. If the Faculty has places available for exchange students and finds your qualifications sufficient, you will be assigned an academic supervisor to watch over your academic progress during your stay at AGH UST.

You will receive information regarding the name and contact details of your supervisor so that you can proceed to the creation of your Learning Agreement.

A Learning Agreement is a document detailing your studying plan during your stay at AGH UST. In order to be valid, it needs to be accepted by both universities.

Once the Learning Agreement has been signed by both universities, you can consider yourself accepted as an exchange student.

Letter of Acceptance

A Letter of Acceptance is issued to all accepted exchange students who need the document for visa purposes. Exchange students within the European Union do not receive Letters of Acceptance, unless they ask for them. For students who do not need a visa, a signed Learning Agreement is considered a sufficient acceptance document.
Qualification procedures for full-time students

Formal requirements

Non-Polish nationals have the right to enrol on, and follow the degree programmes at the AGH University of Science and Technology:

a) in accordance with the rules applicable to Polish nationals defined in separate provisions;
b) on the basis of international agreements, pursuant to the rules defined therein;
c) on the basis of agreements concluded between the AGH University of Science and Technology and foreign entities pursuant to the rules determined in those agreements;
d) on the basis of a decision of the minister competent for higher education;
e) on the basis of a decision of the Rector of the AGH University of Science and Technology.

Non-Polish nationals have the right to enrol on courses at the AGH University of Science and Technology if:

a) they have a visa or residence card, or another document authorising them to stay on the territory of the Republic of Poland,
b) they are of good health, documented by a medical certificate stating that there are no contraindications to undertake education in a chosen field of study and form of education,
c) they have sufficient funds to cover the cost of living on the territory of the Republic of Poland, the cost of return to their home country, and the documents confirming their ability to be in possession of such means,
d) they have a disease and accident insurance policy covering the period of their education in Poland, or the European Health Insurance Card, or they take out insurance with the National Health Found (NFZ) immediately after the beginning of their degree programme.

Language requirements

Non-Polish nationals have the right to enrol on the AGH University of Science and Technology degree programmes in Polish if they:
a) have completed a one-year course preparing them to begin education in Polish, organised by institutions designated by the minister competent for higher education, or
b) have a certificate of proficiency in Polish issued by the State Commission for the Certification of Proficiency in Polish as a Foreign Language, or
c) have a confirmation from the institution enrolling them on a degree programme that their command of the Polish language enables them to participate in the degree programme in Polish.

Non-Polish nationals have the right to enrol on the AGH University of Science and Technology degree programmes in a foreign language if they have a document certifying their command of the foreign language in which the degree programme is to be conducted, referred to in Annexe no. 2 to the Ordinance of the Prime Minister of 16 December, 2009, on the recruitment procedure in the civil service (Dziennik Ustaw [Journal of Laws of the Republic of Poland], no. 218, item 1695), subject to section 4.
Documents confirming the command of a foreign language also include certificates, diplomas and other documents confirming the completion of secondary education abroad, where classes were held in the foreign language in which the programmes attended by a non-Polish national will be held.

Education-related requirements

Non-Polish nationals may apply for admission to the first-cycle degree programmes at AGH UST if they are holders of:

a) Polish secondary-school leaving certificate, or
b) certificate or another document issued abroad, legalised or with an apostille, entitling them to apply for admission to degree programmes at universities of every type in the country in the system of which the institution issuing the certificate is based. The certificate must be deemed equal to an adequate Polish secondary-school leaving certificate according to the provisions on the recognition of school certificates and secondary-school leaving examination certificates granted abroad, or it must be recognized, on the basis of an international agreement, as equal to adequate Polish secondary-school leaving certificates, or as entitling to enrol on degree programmes in the Republic of Poland.

Non-Polish nationals may apply for admission to the second-cycle degree programmes at the AGH University of Science and Technology if, apart from the documents mentioned in section 1, they are holders of:
a) Polish higher education diploma of a first-cycle degree programme, a second-cycle degree programme, a long-cycle degree programme (uniform master’s studies), or

b) certificate or another document granted abroad, legalised or with an apostille, entitling them to enrol on a second-cycle degree programme in the country in the system of which it has been issued. The certificate must be deemed equal to an adequate Polish diploma of the completion of a degree programme according to the provisions on the recognition of the diplomas of completion of degree programmes obtained abroad unless they were exempted on the basis of those provisions from the recognition procedure or recognized on the basis of an international agreement as equal to an adequate Polish diploma of the completion of a first-cycle degree programme, or as entitling to enrol on second-cycle degree programmes in the Republic of Poland.

As a general rule, candidates admitted to AGH UST on the basis of the Rector’s decision bear the cost of education.
Offer of preparatory language courses at AGH University of Science and Technology:

Polish

For accepted students, the AGH University of Science and Technology offers a 10-month (two semesters) intensive Polish course.

Course schedule:

- first semester – general Polish
- second semester – general and technical Polish

The entire course consists of 520 academic hours (1 academic hour = 45 minutes) of general Polish, and 260 academic hours of technical Polish, and it prepares students to continue their studies in Polish at the AGH University of Science and Technology.

GROUPS:

- Small groups (3-5 students)
- Large groups (minimum 6 students)

English

For accepted students, only those who are at A-2/B-1 level (according to CEFR), the AGH University of Science and Technology offers a 10-month (two semesters) English course.
Students will be qualified on the basis of a placement test organized by AGH UST.

**Course schedule:**
- first semester – general English
- second semester – general and technical English

The entire course consists of 210 academic hours (1 academic hour = 45 minutes) of general English, and 30 academic hours of technical English, and it prepares students to continue their studies in English at the AGH University of Science and Technology.

**GROUPS:**
- Small groups (3-5 students)
- Large groups (minimum 6 students)

On students’ request, it is possible to change the number of course hours, e.g. to increase the number of hours.
Qualification process:

Qualification process step by step (non-Polish nationals)

STEP I

**CHOOSE** the AGH UST educational offer and visit the website: [www.international.agh.edu.pl](http://www.international.agh.edu.pl)

STEP II

**COLLECT** the required documents listed in the application form before you begin the qualification process.

STEP III

**REGISTER** the application form on the website: [www.international.agh.edu.pl](http://www.international.agh.edu.pl) in set time limits (twice a year)

STEP IV

Once you have been accepted to the university by the AGH UST Rector: **WELCOME to the AGH UST**

STEP V

**FORMAL REGISTRATION** at AGH UST (providing the Faculty with the originals of all required documents)
Required documents: registration using internet application form

- **scan of secondary school certificate with an apostille**, containing a statement (or issued as a separate document) that the certificate holder is entitled to apply for admission to degree programmes at universities of every type in the country in which the certificate was issued,

- **scan of BA/BSc diploma** (first-cycle degree) **with an apostille** – **only for candidates applying for second-cycle degree programmes**, containing a statement (or issued as a separate document) that the diploma holder is entitled to apply for admission to second-cycle degree programmes at universities of every type in the country in which the certificate was issued,

- **scan of official transcript of records with grade scale**, confirmed by the university,

- **signed Curriculum Vitae,**

- **signed covering letter,**

- **scan of official certificate confirming candidate’s command of English or Polish**

- **scan of passport page** with candidate’s photograph and personal information.

Documents - important and practical information

- **Legalisation** of foreign documents of education – secondary school certificate and first-cycle degree diploma – formal verification of their authenticity. If a country in which a given document was issued is not party to the Hague Convention, the document’s legalisation remains the responsibility of a Polish consular office in that country.
• **Visa** - in case a candidate has been accepted to the university by the AGH UST Rector, the university will issue an official letter to the embassy informing them about the fact of the candidate’s acceptance, as well as the conditions of formal/final registration.

• **Sworn translation of documents** – all documents must be translated into Polish, or should they already be translated, they must be certified to be true to the original either by the Consul/Ambassador of the Republic of Poland having jurisdiction over the area in question, or by a Sworn (Accredited) Translator registered in the Record of Sworn Translators maintained by the Polish Minister of Justice.

• The Hague Convention Abolishing the Requirement of Legalisation for Foreign Public Documents is an international treaty drafted by the Hague Conference on Private International Law. It specifies the modalities through which a document issued in one of the signatory countries can be certified for legal purposes in all the other signatory states. Such a certification is called an **apostille**. It is an international certification comparable to a notarisation in domestic law.

**Nostrification of documents**

According to the *Regulation of the Minister of Education and Science on the Nostrification of School Certificates and Maturity Certificates Obtained Abroad* of 6th April, 2006, any school certificate obtained abroad has to be legalized in the country in which it was issued and then presented to the local
educational authority (Kuratorium Oświaty) in Poland in order to be nostrified (officially recognised).

The above does not apply to the certificates issued in the countries which have signed a bilateral agreement with Poland on the recognition of educational credentials. The list of current bilateral agreements can be found on the website: http://www.buwiwm.edu.pl/rec/legal.htm#agree.

Foreign credentials which give access to higher education abroad are recognized as such in Poland similarly to other school certificates. However they must contain a clause confirming that their holders have access to higher education institutions in their own country. In case the certificate does not include such a clause, the authorities of the school issuing the certificate may issue a separate note confirming this fact.

As in the case of other school certificates, the credentials issued in the countries with which Poland has signed an agreement on the recognition of qualifications for academic purposes need not be presented to Polish local educational authorities for the purpose of nostrification.

Further information concerning the obligatory nostrification procedure can be found on the website: http://kuratorium.krakow.pl/index.php?ac=111&id=2210.

Language certificates

AGH UST accepts the following certificates and diplomas as the confirmation of language proficiency:

1. Diplomas of:

   a) philological studies in the field of foreign languages and applied linguistics;
b) a foreign language teacher training college;
c) the National School of Public Administration (KSAP).

2. A document issued abroad which confirms awarding an academic degree or an academic title – it certifies the knowledge of the language of the educational institution.

3. A document confirming the completion of university-level or postgraduate studies conducted abroad or in the Republic of Poland – it certifies the knowledge of the language provided that the only language of instruction was a foreign language.

4. A document issued abroad and considered equivalent to the Polish school-leaving certificate – it certifies the knowledge of the language of instruction.

5. An International Baccalaureate Diploma.


7. A certificate of passing a ministerial exam [egzamin resortowy]:
   a) at the Ministry of Foreign Affairs;
   b) at the ministry directed by the minister competent for economic issues, the Ministry of Economic Cooperation with Foreign Countries, Ministry of Foreign Trade, and the Ministry of Foreign Trade and Maritime Economy;
   c) at the Ministry of National Defence - level 3333 and level 4444 according to STANAG 6001.
8. A certificate confirming the knowledge of a foreign language issued by KSAP as a result of a linguistic verification procedure.

9. A certificate confirming job qualification for a high-ranked government position issued by KSAP.

10. A document confirming an entry into the Record of Sworn Translators.

11. Certificates confirming knowledge of a foreign language at B2 level according to Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR):


11.2) Certificates of the following institutions:

   a) Educational Testing Service (ETS), in particular:
      
      • Test of English as a Foreign Language (TOEFL) – at least 87 points in the Internet-Based Test (iBT);
      
      • Test of English as a Foreign Language (TOEFL) – at least 180 points in the Computer-Based Test (CBT), completed with at least 50 points in Test of Spoken English (TSE);
      
      • Test of English as a Foreign Language (TOEFL) – at least 510 points in the Paper-Based Test (PBT), completed with at least 3.5 points in the Test of Written English (TWE), and at least 50 points in the Test of Spoken English (TSE);
- Test of English for International Communication (TOEIC) – at least 700 points;
- b) European Consortium for the Certificate of Attainment in Modern Languages (ECL);
- c) City & Guilds, City & Guilds Pitman Qualifications, Pitman Qualifications Institute, in particular the following certificates:
  - English for Speakers of Other Languages (ESOL) – First Class Pass at Intermediate Level, Higher Intermediate Level, Advanced Level;
  - International English for Speakers of Other Languages (IESOL) – the Communicator level, the Expert level, the Mastery level;
  - City & Guilds Level 1 Certificate in ESOL International (reading, writing and listening) Communicator (B2) 500/1765/2;
  - City & Guilds Level 2 Certificate in ESOL International (reading, writing and listening) Expert (C1) 500/1766/4;
  - City & Guilds Level 3 Certificate in ESOL International (reading, writing and listening) Mastery (C2) 500/1767/6;
  - Spoken English Test (SET) for Business – Stage B Communicator level, Stage C Expert level, Stage C Mastery level;
  - English for Business Communications (EBC) – Level 2 and Level 3;
  - English for Office Skills (EOS) – Level 2;
d) Edexcel, Pearson Language Tests, Pearson Language Assessments, in particular:
   • London Tests of English, Level 3 (Edexcel Level 1 Certificate in ESOL International);
   • London Tests of English, Level 4 (Edexcel Level 2 Certificate in ESOL International);
   • London Tests of English, Level 5 (Edexcel Level 3 Certificate in ESOL International);

e) Education Development International (EDI), London Chamber of Commerce and Industry Examinations Board, in particular the following certificates:
   • London Chamber of Commerce and Industry Examinations (LCCI) – English for Business Level 2, English for Business Level 3, English for Business Level 4;
   • London Chamber of Commerce and Industry Examinations (LCCI) – Foundation Certificate for Teachers of Business English (FTBE);
   • London Chamber of Commerce and Industry Examinations (LCCI) – English for Tourism Level 2: Pass with Credit, and Pass with Distinction;

f) University of Cambridge ESOL Examinations, British Council, IDP IELTS Australia, in particular: International English Language Testing System IELTS – over 6 points.
Legal arrangements

Once you have been accepted as an international student to AGH UST, the Centre for International Students will provide you with a Letter of Acceptance, in which you will find the official confirmation of your acceptance to AGH UST, and further information regarding the course you have been accepted for.

From that point you can start attending to other legal requirements and arrangements that will enable your stay in Poland.

This section is aimed at helping you to obtain the obligatory Health Insurance and a Student Visa, and also to advise you on how to apply for Temporary Residence Permit.

Health insurance

As the National Health Insurance Act of February 1997 (Journal of Laws of the Republic of Poland, 1997, number 28, item 153, with further amendments) does not encompass individuals from other countries staying or residing in Poland, all non-Polish citizens visiting or studying at our University need to be insured against possible consequences of accidents and the cost of medical treatment, or they have to join the Polish National Health Fund immediately upon their arrival.

It is one of your responsibilities as an international student to ensure that you have valid insurance during your entire stay at AGH UST.
The Centre for International Students can assist you in choosing a suitable insurance policy and/or filling in necessary forms (in case they are provided entirely in Polish), but you will have to cover all insurance costs. Please remember that if you opt for insurance against consequences of accidents and the cost of medical treatment, you will have to pay for any/all doctor appointments not covered by your insurance policy (such as allergies, flu and/or other medical conditions).

Joining the National Health Fund will allow your doctor appointments to be free of charge, but will not entitle you to any payments in the case of an accident or the need for hospital treatment.

**Getting a visa**

After receiving a Letter of Acceptance (or before receiving the Letter if you wish so), you will need to apply for a Student Visa. Although Polish Embassies around the world can issue visas which may have different expiry dates, we encourage you to apply for a visa that will remain valid for at least 3 months (this will give you enough time to finalize the legal and administrative aspects of your stay in Poland), though a visa valid for an entire year is preferred.

Please remember that the AGH University of Science and Technology sends the Letter of Acceptance only to you. However, upon a request from the Polish Embassy where you are applying for a visa, we can fax them a confirmation letter stating that you have been accepted as a student to AGH UST. In such a case, we will also fax a copy of your Letter of Acceptance to the Embassy. This should resolve any problems that you might have obtaining a visa.
However, please remember to make sure that you meet any other requirements from the embassy.

In an unfortunate case of not being granted a visa, AGH UST will refund your tuition fees, but will deduct the enrolment fee, which is non-refundable.

**Temporary residence permit**

Temporary Residence Permit is a document which allows you to stay in Poland for the period of no more than two years (after that you have to reapply for the Permit).

All non-European students intending to study in Poland full-time have to apply for the Permit in order to be allowed to stay in the country.

Please remember that you have to apply for the Permit **no longer than 45 days before your Visa expiry date**. The Centre for International Students will provide you with all necessary help (and in case you need a Polish speaking guide, we will arrange for a Polish student to help you with the formalities), but you need to bear in mind that most legal arrangements require your personal contact.

To apply for a Temporary Residence Permit, you will have to fill in an Application Form and submit various documents. Some of the documents will be provided to you by AGH UST (such as a confirmation letter stating that you are a student at the University), but most of the documents you will have to provide yourself.
You will also be asked to prove that you have sufficient funds to cover your stay in Poland (a bank statement from your bank, or the bank of your financial supporter should be enough).

**IMPORTANT:** If you are applying for a Temporary Residence Permit for the first time, you will be required to present the original of your Birth Certificate and a sworn (certified) translation of it. Please remember to collect the necessary documents before you leave your country.
Educational offer

Over 36,000 full-time and part-time students, as well as more than 750 doctoral students attend courses at 15 faculties and the Multidisciplinary School of Engineering in Biomedicine. Students can choose from 51 fields of study and 200 specializations, whose wide variety is worth mentioning: besides traditional faculties closely related to mining and metallurgy, AGH UST has faculties where you can study not only computer science, telecommunications, automation, robotics, new materials, technical physics and applied mathematics, but also management and sociology. New disciplines are being introduced as well: Mechatronics (the combination of electronics, mechanics and robotics), Biomedical Engineering, Computer Science and Econometrics, as well as Technical and Computer Science Education.

More details concerning the AGH UST educational offer in English is available at the Centre for International Students’ website: www.international.agh.edu.pl

First-cycle degree programmes

Electronics and Telecommunication

First-cycle degree graduates in Electronics and Telecommunications acquire theoretical knowledge and practical abilities essential for designing, building, practical application and exploitation of electronic circuits, equipment
and telecommunications systems, networks and services. Education is based on carefully selected courses, which serve suitable education for future electronics and telecommunications engineers in order to be able to take advantage of modern technologies and computer-aided designing, as well as to create new technologies and computer tools.

There is a substantial contribution of practical assignments during the course of studies (basic, major, and specialization courses: well-equipped laboratories, computer-aided design tasks, projects and classes). Every student also has to do a four-week internship in a specialist enterprise or company, which will further develop their professional skills.

The programme creates an opportunity for students to get a broad education and practical skills based on some basic and general courses, but also to gain some important knowledge in the field of economy, which will allow graduates to participate actively in the economic life and conduct their own independent economic activities.

**Course duration:** 7 semesters – 3.5 years

**For more information please contact:**
Faculty of Electrical Engineering, Automatics, Computer Science and Electronics
Ms Jolanta Lepiarczyk
e-mail: lepiarcz@agh.edu.pl
Andrzej Staniszewski, DSc, Vice-Dean
e-mail: stanisze@kt.agh.edu.pl

† Mechatronics

Mechatronics means interdisciplinary studies in the areas of engineering and technology. In general, it is a new approach to designing and man-
ufacturing innovative products. Mechatronics combines such fields as mechanics, electronics, controlling, and computer engineering.

Graduates in Mechatronics can analyse, design and manufacture, operate and service complex interdisciplinary products. They are able to recognize real engineering problems, and are ready to work as part of engineering teams in many different fields of industry, including automation, aviation, house equipment, consumer electronics, defence, software, manufacturing etc.

Studying is divided into two parts: general courses and technical courses. General courses include mathematics, physics, chemistry, material science, computer and control science, while technical courses include mechanical design, manufacturing processes, electronics, electrical engineering, CAD/CAM/CAE, measurements and signal processing, project management and software engineering.

The programme has been created because we believe it is very important for engineers nowadays to have a wide knowledge in many disciplines, as it helps them to achieve innovative solutions, and to be competitive on the global market.

**Course duration:** 7 semesters – 3.5 years

**For more information please contact:**
Faculty of Mechanical Engineering and Robotics
Wojciech Lisowski, DSc, Vice-Dean
email: lisowski@agh.edu.pl
Second-cycle degree programmes

» Applied Computer Science: Computer Methods in Science and Technology

A three-semester course leading to master’s degree in applied computer science – a joint programme of three faculties: Faculty of Physics and Applied Computer Science, Faculty of Geology, Geophysics and Environmental Protection, and Faculty of Metals Engineering and Industrial Computer Science.

The portfolio of modules covers advanced subjects from the methods of modelling and optimisation, through database management and internet technologies, to biometrics, image processing, and high performance computing.

The core modules include:
- Advanced Databases
- Identification of Models and Systems
- Optimisation Methods
- High Performance Computing
- Image Processing and Analysis
- Biometrics

Students will gain skills in database and application server system design and management, advanced data modelling for complex system optimisation, and image processing for applications in biometrics. Graduates possess skills and knowledge to begin careers in the sectors of science and industry.

Course duration: 3 semesters – 1.5 years (including master’s thesis writing)
Biomedical Engineering: Emerging Health Care Technologies

The master’s programme (MSc) prepares students for jobs and research in Biomedical Engineering. Graduates will demonstrate advanced knowledge and engineering skills in the application of electronics and computer science in biomedicine, technical support for remote delivery of medical services, materials science and tissues for medicine, biomechanics, modelling of biological structures and systems, and medical imaging technologies. Graduates’ skills include formulating engineering problems in the area of biomedicine, solving problems through modelling, designing, development and application of technologies with the use of information techniques support, information transmission and processing, leadership of development teams, innovation and creativity in the implementation of ideas, decision making.

The BME learning and research environment is highly internationally oriented, and the programme and courses are conducted in English. This enables foreign students an easy access to our programme. Our students may carry out part of the master’s programme at a university abroad. Currently the BME
programme office is actively recruiting students from various European countries, and from other continents. This will result in a more international composition of our master students population. BME master’s programme students may study up to one semester at another selected university. With some universities (e.g. Prague, Lisbon, Grenoble, Twente, Magdeburg etc.) MSIB has an exchange contract or has good contacts within biomedical research groups. The master’s programme of MSIB offers several opportunities for adding an international dimension to the knowledge and practical experience of its students. MSIB believes that a stay abroad is a valuable component of the studying process. The master’s assignment abroad is still under the supervision of a professor of one of the MSIB-related research departments of AGH UST, and under the responsibility of the Master’s Diploma Board.

For more information please contact:
Multidisciplinary School of Engineering in Biomedicine
Professor Piotr Augustyniak
email: august@agh.edu.pl

Chemical Technology: Clean Coal Technologies

The master’s programme of “Clean Coal Technologies” offered at the Faculty of Energy and Fuels of the AGH University of Science and Technology focuses on an important aspect of energy production – the application of coal. Although coal is a fossil fuel, it is believed to be a good medium-term solution for energy production because:

• it is an abundant energy source, and
• it is available at a fairly stable price; it also comes from many international suppliers, and therefore guarantees energy security.
However, as fossil fuels produce a lot of pollutants, for example CO$_2$, and thus are responsible for the degradation of the environment and climatic changes, new and modern technologies are necessary – Clean Coal Technologies. The course will educate specialists who will not only understand but will also be able to apply and further develop methods of using coal to produce energy in an environmentally friendly way. Such specialists will possess knowledge both in energy technologies and in chemical technologies. The programme focuses on energy and its chemical aspects, with a special emphasis on advanced coal technologies, the gasification of coal and biomass, environmental protection, process design and integration etc. Additional courses are offered on planning and forecasting in energy systems, energy policy, sustainable energy development, renewable energy and fuel cells, and others.

**Course duration:** The standard programme has been designed for 3 semesters, but students may also apply to study at a 4-semester programme. The latter encompasses all the courses mentioned above during the first two semesters of studies, and additionally, all students spend the last two semesters at a foreign partner university (in Sweden, Germany, or Portugal). The 3-semester programme offers a Polish master’s degree diploma in chemical technology, and the 4-semester programme may lead to a double diploma.

**Requirements:** BSc in a cognate discipline or equivalent document
Chemical Technology: Sustainable Fuels Economy

Fuels – the source of primary energy and the basis for the development and even the existence of contemporary economies. The production and use of fuels needs to follow sustainability principles in order to be acceptable in the long term. Students at the course gain the competence and knowledge in the field of fuel technologies, and the analysis of its use and production.

The course combines two groups of subjects: the basis of fuel technologies, and the principles of energy systems analysis and development. The former group comprises the following subjects: engineering of chemical reactors, surface phenomena and industrial catalytic processes, physics of energy transformation, basics of biotechnology, batteries and fuel cells, and environmental protection in chemical processes. The latter group comprises the following subjects: modelling and planning of energy systems, energy markets and policies, energy and the environment. Classes, laboratories and projects constitute the main part of the course, thus giving practical competence for the application of the acquired knowledge. Graduates are prepared to analyse and optimise the processes of fuels use and production with respect to technical, economic, and environmental issues.

Course duration: 3 semesters – 1.5 years (including master’s thesis writing)
Requirements: BSc in a cognate discipline or equivalent document
Electrical Engineering: Computer Engineering in Electrical Systems (CEES)

Students of the CEES specialization will gain extensive knowledge within the scope of applied computer science, including the process of programming in the field of broadly-understood electrical engineering. They will gain specialist knowledge in the areas of programming, controlling, analysing, and modelling electrical systems, as well as the measurement of electrical and non-electrical quantities, and signal analysis. They will also gain knowledge in the domains of basic electrical and electronic equipment: machines, micro-machines, electric drives, power electronics devices, as well as the production, distribution, and consumption of electrical energy.

Graduates of the CEES specialization will become engineers possessing extensive knowledge within the scope of applied computer science, with a particular focus on electrical engineering, which they will be able to use for the purpose of designing and controlling electrical objects, systems, and processes.

Course duration: 3 semesters – 1.5 years (including master’s thesis writing)
For more information please contact:
Faculty of Electrical Engineering, Automatics, Computer Science and Electronics
Ms Jolanta Lepiarczyk
email: lepiarcz@agh.edu.pl
Professor Jan Rusek
email: gerusek@cyf-kr.agh.edu.pl

Electrical Engineering: Smart Grids Technology Platform

The specialization aims at presenting Smart Grids Technology Platform and its applications in the so-called “Intelligent Power Systems”, capable of integrating and controlling distributed energy sources and containers. Graduates will know how to optimise the existing power systems by means of modern power electronics systems, as well as computer science and telecommunication tools, providing the safety and reliability of high quality energy supplies. Graduates will be able to process and use energy in an efficient way, as well as undertake activities which focus on the improvement of living standards in the conditions of energy market competitiveness. The course will be held in English, thanks to which graduates will also be able to learn specialist terminology in the field of the European Smart Grids Technology Platform.

Course duration: 3 semesters – 1.5 years (including master’s thesis writing)

For more information please contact:
Faculty of Electrical Engineering, Automatics, Computer Science and Electronics
Ms Jolanta Lepiarczyk
email: lepiarcz@agh.edu.pl
Electronics and Telecommunications: Sensors and Microsystems

Graduates of the course are awarded the degree of Master of Science in Electronics and Telecommunications, specialization Sensors and Microsystems.

The specialization prepares students to facilitate technological progress. Graduates are qualified to conduct creative professional activity in the latest electronics and telecommunications, especially in the field of sensors and microsystems. They are also prepared to supervise teams, as well as to advance to the third cycle of studies (doctoral research).

The programme of the specialization focuses on educating prospective graduates to undertake engineering and scientific research activities in the field of sensors and sensor circuits, microsystems, equipment and measurement standards, as well as thin-film structures.

In the first semester (uniform across all specializations) students gain supplementary knowledge in basic theoretical subjects (Mathematics, Stochastic Processes, Numerical Methods, Optimisation Methods, Theory of Information and Coding), and in major courses (Fibre Optics and Photonics, Programmable Logic Devices, Electromagnetic Compatibility, Security of Information Systems, Reliability and Diagnostics).
Graduates of Electronics and Telecommunications, specialization Sensors and Microsystems, can work in enterprises producing equipment for automatics, robotics, and specialist measurement and medical hardware, in companies designing and producing sensors and microsystems, in plants focusing on the designing and production of equipment for the automotive industry, in units developing new materials for electronics, nanoelectronic systems in spintronics, photovoltaic wireless measurement and control networks, as well as in institutions dealing with the acquisition and transmission of data.

**Course duration:** 3 semesters – 1.5 years (including master’s thesis writing)

**For more information please contact:**
Faculty of Electrical Engineering, Automatics, Computer Science and Electronics
Professor Tadeusz Pisarkiewicz
email: pisar@agh.edu.pl

➢ **Electronics and Telecommunications: Computer Network Equipment and Systems**

Graduates of the course are awarded the degree of Master of Science in Electronics and Telecommunications, specialization Computer Network Equipment and Systems.

The specialization prepares students to facilitate technological progress. Graduates are qualified to conduct creative professional activity in the latest electronics and telecommunications, especially in the field of computer network equipment and systems, and they are also prepared to supervise teams.
The programme of the specialization focuses on educating prospective graduates to undertake engineering and scientific research activities in the field of modern computer network equipment and systems, computer architecture, embedded systems, wireless technology, and object-oriented methods of computer systems design.

Graduates know the equipment and standards of local area networks, microsystems and sensor networks, and they possess the ability to develop and build computer and network hardware, data transmission systems, as well as to create specialist computer software.

In the first semester (uniform across all specializations) students gain supplementary knowledge in basic theoretical subjects (Mathematics, Stochastic Processes, Numerical Methods, Optimisation Methods, Theory of Information and Coding), and in major courses (Fibre Optics and Photonics, Programmable Logic Devices, Electromagnetic Compatibility, Security of Information Systems, Reliability and Diagnostics).

In the following semesters the education is complemented by the following specialist courses: Front-End Integrated Circuits in CMOS Technology, Embedded Systems in SoC Structures, Object-Oriented Methods of Systems Design, Computer Architecture, Wireless Technology, and within the framework of four elective courses.

Graduates of Electronics and Telecommunications, specialization Computer Network Equipment and Systems, are prepared
to stark work in electronic and data communication industry, in enter-
prises and firms oriented towards the designing, production, installation
and operation of computer network equipment, data communication
systems, corporate networks, automatic and robotic systems, measure-
ment and control equipment, medical equipment, multimedia services
etc. (e.g. banks, hotels, offices, hospitals), as well as in research and devel-
opment centres. Graduates of the course can also advance to the third cy-
cle of studies (doctoral research).

Course duration: 3 semesters – 1.5 years (including master’s thesis writ-
ing)

For more information please contact:
Faculty of Electrical Engineering, Automatics, Computer Science and
Electronics
Professor Stanisław Kuta
email: kuta@agh.edu.pl

Electronics and Telecommunications: Networks and Services

Graduates of the course are awarded the degree of Master of Science
in Electronics and Telecommunications, specialization Networks and
Services.

The specialization prepares students to facilitate technological progress.
Graduates are educated to conduct creative professional activity in the
latest electronics and telecommunications, especially in the field of tel-
ecommunication networks and services.

The programme of the specialization focuses on the education of pro-
spective graduates who can develop new telecommunication equip-
ment, systems, and networks, and who are also prepared to manage ex-
isting networks, and analyse existing networks and future network standards, including wireless data transmission networks, modern IP networks, exchange of electronic documents, methods of modelling and testing telecommunication protocols, efficiency, research and development of data telecommunication systems, as well as to create www pages and digital video libraries.

In the second and third semester the education is complemented by three major courses: Network and Service Management, Digital Transmission Techniques, and Modelling and Simulation of Networks and Services, and within the framework of the following elective courses: Wireless Data Transmission Systems, WWW – SED and PHP, Digital Video Libraries, Models of Telecommunication Services and Networks, Unified Signalisation Services, and Global Communication Systems.

Graduates of the course can also advance to the third cycle of studies (doctoral research).

**Course duration:** 3 semesters – 1.5 years (including master’s thesis writing)

**For more information please contact:**
Faculty of Electrical Engineering, Automatics, Computer Science and Electronics
Professor Andrzej Pach
e-mail: pach@kt.agh.edu.pl
Energy Technology: Sustainable Energy Development

Contemporary energy systems must fulfil the principle of sustainability. We should not adversely affect the environment and economy prospects of our and future generations. In order to meet these requirements we need knowledge in various fields which involves the analysis of energy systems development. The course of Sustainable Energy Development includes two balanced groups of subjects. The first group focuses on energy technologies and comprises the following subject areas: physics and chemistry of energy, and contemporary energy technologies with a focus on renewable technologies. The second group refers to energy planning and forecasting processes, and comprises the following subjects: management, economics, auditing, planning, and forecasting. The course concentrates on providing practical knowledge, and therefore classes, laboratories and projects predominate the course programme.

Our aim is to enable students to gain the ability to analyse and optimise plans of energy systems development. The selection of energy carriers and technologies while taking into consideration the economic, environmental and technological issues is the basis for building harmonized development plans. The competence and knowledge of graduates constitute a firm base for their contribution into energy systems development.

Course duration: 3 semesters – 1.5 years (including master’s thesis writing)

Requirements: BSc in a cognate discipline or equivalent document

For more information please contact:
Faculty of Energy and Fuels
Professor Teresa Grzybek, Vice-Dean
email: grzybek@agh.edu.pl
Geophysics: Applied Geophysics

Individuals who have completed this postgraduate specialization will possess extensive knowledge in the fields of exact and earth sciences, as well as advanced knowledge in the areas of pure and applied geophysics. They will gain theoretical basics, and will be able to describe and analyse geophysical parameters acquired by means of different geophysical methods in the context of the evaluation of physical properties of rocks, and the dynamics of physical processes.

Graduates will know how to use the up-to-date systems for data processing and interpretation. They will be able to design and carry out geophysical measurements, as well as manage the processes of solving prospecting problems in complex geological conditions, and in the conditions of mineral resources recovery.

Graduates will be able to design and perform environmental monitoring in time and space with the use of geophysical methods. They will be able to apply the latest geophysical methods into engineering problems. They will know how to design and complete geophysical surveys in order to evaluate natural and man-made environmental hazard, including threats related to the extraction of energy and mineral resources.

Graduates will also be able to manage projects both in terms of their contents, as well as from their legal and economic per-
They will be able to co-operate with specialists in other areas and branches of science.

Master’s degree holders in Applied Geophysics can manage employees and solve economic problems while maintaining legal and ethical principles. They are also ready to begin work in geophysical, geological and mining companies, as well as in research and development centres. Graduates can also advance to the third cycle of studies (doctoral research).

**Course duration:** 3 semesters – 1.5 years (including master’s thesis writing)

**For more information please contact:**
Faculty of Geology, Geophysics and Environmental Protection
Professor Jadwiga Jarzyna
email: jarzyna@agh.edu.pl

▶ Management and Production Engineering: Logistic Management

Classes in the specialization of Logistic Management start in the eighth semester of the Management and Production Engineering studies, and the programme lasts three semesters. All classes are conducted strictly in English, and the total number of hours is 845, of which 270 are lectures, 365 classes, and 210 laboratory classes.

Graduates completing this specialization will have knowledge of the functioning of modern logistic systems, and the basics of economic sciences, organization and management, as well as will possess some good managerial skills. Graduates will also have skills enabling them to solve logistic problems by means of engineering methods and techniques, including designing logistic systems and processes, managing specialist logistic func-
tions and processes, applying computer-aided systems in logistic management, managing costs, finance and capital, as well as personnel recruitment and training.

Course duration: 3 semesters – 1.5 years (including master’s thesis writing)

For more information please contact:
Faculty of Management
Rafał Kusa, DSc
phone: +48 12 617 46 71
email: rkusa@zarz.agh.edu.pl

Materials Engineering: Functional Materials

The course of Functional Materials is a new educational offer designed for graduates with a general background in material physics, chemistry, and engineering. Students will gain knowledge in the field of interrelations between the manufacturing methods, structures and properties of materials, as well as the unique properties of materials which can be developed by means of modern manufacturing and/or processing techniques. The application area covers electronics, photonics, energy storage and conversion, heterogeneous catalysis, health care, as well as sensing devices. The programme of studies encompasses lectures, seminars and laboratory projects which focus on the issues of surface functionalisation, manufacturing bulk materials for demanding environments, and the integration of different materials, as well as the elements of computer-aided design, modelling, and advanced characterization methods.
Course duration: 3 semesters – 1.5 years (including master’s thesis writing)

Requirements: BSc in chemistry, physics, or materials engineering

For more information please contact:
Faculty of Materials Science and Ceramics
Professor Elżbieta Godlewska
email: godlewsk@agh.edu.pl

» Mathematics: Financial Mathematics

It is a full-time, four-semester graduate programme leading to the degree of Master of Science (MSc) in mathematics.

The core modules include:

- Portfolio theory and risk management
- Black-Scholes theory
- Numerical methods in finance, including Monte-Carlo simulations
- Theory of stochastic interest rates
- Case studies

Students will gain skills in quantitative finance that will enable them to embark on a range of careers throughout the financial services industry with a particular focus on derivative pricing, risk management, and fund management. Graduates will typically find employment within investment banking, the hedge fund industry, insurance, and asset management.

Course duration: 4 semesters – 2 years (including master’s thesis writing)

For more information please contact:
Faculty of Applied Mathematics
Professor Marek Capiński
email: marek.capinski@agh.edu.pl
Mathematics: Mathematics in Computer Science

It is a full-time, four-semester graduate programme leading to the degree of Master of Science (MSc) in mathematics.

The core modules include:

- Graph theory and networks
- Probabilistic methods in discrete mathematics
- Theory of algorithms
- Computational complexity theory
- Automata theory and Petri nets

Students will gain skills in discrete mathematics and its applications which will enable them to embark on a range of careers throughout industry with a particular focus on the modelling, analysis, and management of manufacturing systems.

Graduates will typically find employment in banking, industry, management, and research centres.

**Course duration:** 4 semesters – 2 years (including master’s thesis writing)

**For more information please contact:**
Faculty of Applied Mathematics
Professor Mariusz Woźniak
email: mwozniak@agh.edu.pl

Mathematics: Mathematics in Management

A full-time, four-semester graduate programme leading to the degree of Master of Science (MSc) in mathematics.
Graduates can apply mathematics and computer science to management. The core modules of the programme include statistics in management, databases, graphs and networks, as well as an introduction to financial management and software engineering.

**Course duration:** 4 semesters – 2 years (including master’s thesis writing)

**For more information please contact:**
Faculty of Applied Mathematics
Professor Antoni Marczyk
email: marczyk@agh.edu.pl

▶ **Mechatronics: Mechatronic Design**

Designing mechatronic products requires a dedicated approach that takes into account interdisciplinary design, market related constraints, multifunctionality, user-friendly operation, and the demand for minimizing the cost of the whole product operation period. Thus designers who create mechatronic products should possess comprehensive interdisciplinary knowledge, ability to co-operate in interdisciplinary design teams, as well as team management skills and knowledge of how to use the latest tools of computer-aided engineering. Additionally, the know-how in scheduling and carrying out the prototyping of mechatronic systems is very useful.

To a considerable extent, the specialization is based on a project-oriented type of studying, including co-operation in project teams. Such approach leads to a better understanding of the specific nature of mechatronic design processes, and to learning the techniques of solving interdisciplinary design problems. During the course of studies, each student takes part in the designing and prototyping of a mechatronic product.
The programme consists of courses in designing mechanical, electronic and control systems, as well as the techniques of the application of software and hardware. A quarter of the courses deal with the problem of the integration of mechatronic systems. During classes students learn how to use dedicated software tools and testing equipment in the processes of designing and prototyping complex mechatronic systems.

The specialist courses also comprise the problems of designing embedded systems, as well as microsystems (MEMS) that are nowadays more and more often used in everyday life and industry. Thanks to co-operation between the Department and industrial partners students take part in real research and development activities, as well as attend practical trainings.

**Course duration:** 3 semesters – 1.5 years (including master’s thesis writing)

**For more information please contact:**
Faculty of Mechanical Engineering and Robotics
Wojciech Lisowski, DSc, Vice-Dean
email: lisowski@agh.edu.pl

➤ **Mining and Geology: Economic Geology**

Graduates of Economic Geology have extensive knowledge of prospecting, documenting, and evaluating mineral deposits. Graduates can plan and carry out exploration programmes depending on the genetic type of a deposit and available elements, as well as control the process of the excavation of ore ho-
Knowledge gained during the course of studies allows graduates to choose an optimum field and laboratory with respect to the methods necessary for both prospecting and documentation reports.

Graduates of the specialization know how to perform field works, and are familiar with the methodology of different sampling methods. Theoretical knowledge is not everything. During the course of studies, students take part in obligatory field works and ‘thesis’ field works. The location of the ‘thesis’ field works depends on the subject of the student’s master’s thesis (in last few years, graduates carried out ‘thesis’ field works in Poland, Ukraine, Kosovo, Slovakia, Australia, Laos, and Mongolia).

Graduates of Economic Geology have knowledge and skills to evaluate collected samples under the microscope, choose samples for further chemical assay, and evaluate results, describe core drills (logging) and evaluate mineral deposits, as well as calculate resources and reserves based on a 3-4D model of the deposit. Knowledge gained at the course allows graduates to use the latest software to present all types of data in the form of maps, diagrams, and profiles, control validation of extracted mineral commodities, and cooperate with miners performing geological services. Graduates are also familiar with software for mineral deposit modelling, reserve calculation, and open-cut and underground mining management.

**Course duration:** 3 semesters – 1.5 years (including master’s thesis writing)

**For more information please contact:**
Faculty of Geology, Geophysics and Environmental Protection
Professor Adam Piestrzyński
e-mail: piestrz@geol.agh.edu.pl
website: www.econgeol.agh.edu.pl
Mining and Geology: Mining Engineering

Graduates of Mining Engineering are prepared to work in underground and opencast coal mines, mines of metal ores, salt and other minerals, and in other mining plants dealing with the extraction of mineral raw materials, and in the companies of underground construction. Students of Mining Engineering deal with modern subjects within the scope of mining technology, mechanization, geomechanics, blasting techniques, natural threats (rock bursting, roof falls, underground fire prevention, methane control etc.), and geological background.

Thanks to access to the latest software and fast computers, students can simulate mining conditions by means of numerical modelling. Graduates gain full qualifications entitling them to hold top management positions in a mine. They can also find employment in research and scientific centres serving the mining industry.

Students are also provided with a wide range of theoretical and practical knowledge in the field of mining economics, as well as the organization and management in the mining industry. They can use modern computer techniques and technologies. During the course of studies, AGH UST ensures practical training for students in some very modern Polish mines.

Course duration: 4 semesters – 2 years (including master’s thesis writing)
For more information please contact:
Faculty of Mining and Geoengineering
Jacek Jakubowski, DSc
email: MiningEngineering@agh.edu.pl

Petroleum and Gas Engineering: Petroleum Drilling

The engineering and processing of liquid and gaseous fuels is a critical factor for further dynamic development of the global economy. However, it also necessitates the employment of a vast number of experts educated to use appropriate technology. Graduates of Petroleum and Gas Engineering master studies (MSc) gain the essential knowledge of oil and gas prospecting, engineering, transportation and storage, as well as hydrocarbons processing. New fuel and energy technologies, environmental protection, and the economy of enterprises are an important part of the programme. The Faculty of Drilling, Oil and Gas at AGH UST is the only faculty in Poland which offers education in Petroleum and Gas Engineering.

Graduates of full-time, master studies in „Petroleum and Gas Engineering” have the right skills to use advanced knowledge in basic and specialist subjects, defined by the educational standards. They can manage various types of teams, and undertake high-risk decisions. They are familiar with the basics of scientific research, and are encouraged to take creative initiative. Moreover, graduates of Petroleum and Gas Engineering are prepared to work in institutions connected with energy, with a special focus on oil and gas, technical supervision teams, state and local administration, as well as project units. Graduates with the best results can find employment in scientific research institutions, as well advance to the third cycle of studies (doctoral research).
Depending on knowledge and skills gained during the course of studies, graduates are prepared to undertake jobs in line with the chosen specialization. Graduates of Petroleum Drilling are qualified to carry out projects, as well as vertical, directional and horizontal on- and offshore drilling in various geological conditions, and they are familiar with the workover and closing of boreholes, computer simulations of drilling processes, preparation of recipes of drilling mud, as well as drilling fluids and sealing slurries.

Graduates of Petroleum and Gas Engineering can find employment in:

- companies specializing in prospecting, as well as in the on- and offshore exploitation of oil and natural gas;
- scientific institutions connected with the petroleum industry;
- design offices and institutions manufacturing and operating pipelines, and dealing with the distribution of installations for hydrocarbons;
- design offices and companies performing underground storage of hydrocarbons;
- design offices and institutions operating LPG, LNG and CNG terminals;
- state administration units responsible for investment, environmental protection and management in mining, and ones in charge of assembling transportation systems for oil and natural gas;
- and as foreign representatives of petroleum-type companies.
Course duration: 3 to 4 semesters – 1.5 to 2 years (including master’s thesis writing)

Requirements: BSc in a cognate discipline or equivalent document

For more information please contact:
Faculty of Drilling, Oil and Gas
Professor Jan Ziaja
email: ziaja@agh.edu.pl

Third-cycle degree programmes

Third-cycle degree programmes - doctoral studies

12 faculties of the AGH University of Science and Technology are authorised to confer the degree of doctor of science or doctor of philosophy in the following areas:

- technical sciences
- chemical sciences
- physical sciences
- Earth sciences
- economic sciences
- mathematical sciences

DOCTORAL STUDIES: for detailed information please contact Faculty coordinators listed below.
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<td>Mining and Geoengineering, Geology, Environmental Engineering</td>
<td>Head of Department of Doctoral Studies at Faculty of Mining and Geoengineering - <strong>Professor Bernard Nowak, PhD</strong></td>
</tr>
<tr>
<td>Faculty of Metals Engineering and Industrial Computer Science</td>
<td>Metallurgy, Materials Engineering</td>
<td>Head of Department of Doctoral Studies at Faculty of Metals Engineering and Industrial Computer Science - <strong>Professor Stanisław Turczyn, PhD</strong></td>
</tr>
<tr>
<td>Faculty of Electrical Engineering, Automatics, Computer Science and Electronics</td>
<td>Automatics and Robotics, Electronics, Electrotechnics, Computer Science, Telecommunications, Biocybernetics and Biomedical Engineering</td>
<td>Head of Department of Doctoral Studies at Faculty of Electrical Engineering, Automatics, Computer Science and Electronics - <strong>Professor Ryszard Tadeusiewicz, PhD</strong></td>
</tr>
<tr>
<td>Faculty of Mechanical Engineering and Robotics</td>
<td>Automatics and Robotics, Mechanics, Machinery Construction and Exploitation</td>
<td>Head of Department of Doctoral Studies at Faculty of Mechanical Engineering and Robotics - <strong>Professor Andrzej Świątoniowski, PhD</strong></td>
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<tr>
<td>Faculty of Geology, Geophysics and Environmental Protection</td>
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<td>Faculty of Materials Science and Ceramics</td>
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<tr>
<td>Faculty of Drilling, Oil and Gas</td>
<td>Mining and Geoengineering Geology</td>
<td>Head of Department of Doctoral Studies at Faculty of Drilling, Oil and Gas - Professor Kazimierz Twardowski, PhD</td>
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<tr>
<td>Faculty of Physics and Applied Computer Science</td>
<td>Physics</td>
<td>Head of Department of Doctoral Studies at Faculty of Physics and Applied Computer Science - Professor Andrzej Lenda, PhD</td>
</tr>
</tbody>
</table>

For general (administrative) information please contact: mpyzik@agh.edu.pl

Physics

The doctoral programme at the Faculty of Physics and Applied Computer Science has a long and rich tradition. The impressive number of professors at the Faculty, and a wide range of conducted research projects, in most cases in collaboration with foreign scientific centres, results in an attractive and up-to-date offer of research areas, which leads to a doctoral dissertation under the supervision of the Faculty professors.

The main, broad field of research is physics, but it can be roughly divided into:

- Computer Physics,
- Elementary Particles Physics,
- Front-End Electronics in High-Energy Physics Experiments,
- Environmental Physics,
- Medical Physics and Dosimetry,
• Physical Foundations of Electronics,
• Radiometric Analytical Methods,
• Solid State Physics,
• Technical Nuclear Physics,
• and other topics.

At the moment, the total number of doctoral students at the Faculty is very high (over one hundred). All new applicants should therefore secure – before proceeding with the final application – a pro forma declaration of acceptance by a prospective supervisor.

**Course duration:** The doctoral programme lasts four years, with a possibility of extension for one more year. Students may apply for individual programmes, better suited to their research profile.

**Admission procedure:**

- diploma of second-cycle degree studies in physics, technical physics, or a similar field, and a positive result of an oral examination in physics.

**NB:** candidates with the diploma grade “very good” can enter the programme without an additional examination. Such individuals, however, will be eligible neither for the faculty’s doctoral scholarship nor for a university grant (applies to students with good grades) during the entire first year of studies.

- declaration of a professor of the Faculty of Physics and Applied Computer Science (in exceptional cases, an external professor) who will be taking the duties of the candidate’s doctoral research supervisor.

- scholarships will be granted to individuals with the best joint results: diploma grade + entry examination grade (individuals applying for a scholarship must pass the entry examination). Scholarships can amount to 70% of the minimum salary of a university assistant.
Candidates can find more information at the faculty website.

For more information please contact:
Faculty of Physics and Applied Computer Science
Ms Krystyna Sobczyk
email: ksobczyk@novell.ftj.agh.edu.pl

» Metallurgy: Theory and Technology of Foundry Processes (8 semesters)

Our graduates are well-prepared to face the challenges of modern industry. They possess skills and abilities necessary to develop and implement the latest advanced technologies, and to undertake management roles in modern industrial enterprises. Our staff maintain close relations with a number of research institutes, as well as various industry units.

Scope of entry examination:
Core subjects chosen from the following: mathematics, physics, or chemistry within the scope of higher education, or some selected issues from the technology of foundry engineering within the scope of higher technical education. The result of the application process is a final grade obtained as the arithmetic mean of the diploma grade, and the grade obtained at the entry examination.

Required documents:
• application form and personal questionnaire (www.agh.edu.pl - Level III - PhD courses),
• Curriculum Vitae,
• certified copy of master’s degree (MSc),
• student personal gradebook of completed courses, or diploma supplement,
• written recommendation from an independent researcher (potential supervisor of doctoral dissertation) containing a declaration of doctoral research supervision offered to the applicant,
• written declaration from the Department Head confirming readiness to admit the doctoral student to the Department,
• declaration to cover the cost of the doctoral programme of studies,
• 4 ID-format photographs (signed).

Course duration: 8 semesters – 4 years

For more information please contact:

Head of Doctoral Studies
Professor Mariusz Holtzer
phone: +48 12 617 27 56
email: holtzer@agh.edu.pl

Office for Doctoral Studies
Joanna Ramus
phone: +48 12 617 27 47
email: jramus@agh.edu.pl
Postgraduate studies

Postgraduate studies are additional, supplementary courses offered at the AGH University of Science and Technology.

To apply for a postgraduate programme of studies you already need to hold a Bachelor’s or Master’s degree.

Drilling

Course profile:

Drilling is a one-year, postgraduate course which provides theoretical knowledge to people working in the petroleum industry, or individuals looking for a job. The programme covers the following subject areas: Drilling, Well Logging, Economics, Petroleum Geology, Oil Reservoir Production, Gas Reservoir Production, Well Testing, Quality, Health, Safety & Environmental Management Systems, as well as some more specialist courses: Rock Mechanics, Wellbore Design, Drilling and Production Equipment, Drilling Fluids, Drilling Technology, Well Completion and Workover.

Candidate’s profile:

Bachelor’s degree (BSc) or master’s degree (MSc) are required for admission.

Successful candidates will gain knowledge in the field of drilling and relevant disciplines. Students who successfully pass all exams will receive a certificate of completing a post-
graduate programme of studies at the AGH University of Science and Technology.

**Course Director:** Dariusz Knez, DSc

**Course duration:** 2 semesters (1st October – 30th June)

**Dates for submitting application documents:** 1st May – 1st September

**Required documents:** (we review only complete application documents)

- Curriculum Vitae
- copy of secondary school certificate
- application form
- certificate confirming candidate’s proficiency in English
- university degree or diploma (with an apostille)
- copy of passport
- four recent photographs
- medical certificate in English (general health report, description of chest X-ray)
- official transcript of records
- copy of insurance policy covering the period of the academic year in Poland

**Admission by:** order of submitting application documents

**Maximum number of accepted candidates:** 36

**For more information please contact:**

Jolanta Ulman, MA
phone +48 12 617 22 10
email: ulman@wnaft.agh.edu.pl
Mathematical Finance

The course is an intensive, one-semester programme consisting of five modules:

- Mathematical methods in finance
- Discrete models of financial markets
- Portfolio theory
- Continuous models, and Black-Scholes theory
- Stochastic interest rates

Students are offered materials on CDs for self-study, including multimedia interactive presentations, and lecture notes and exercises with model solutions (courtesy of the University of York, UK). They have one contact hour per week with their tutor, where the material from all five modules is discussed. Performance is continuously assessed, which is then reflected in the final grades for each module. Each module carries 6 ECTS points. The programme is offered in either the winter or summer semester.

Candidates are expected to have an undergraduate degree in a quantitative subject (which should include at least two years of courses in undergraduate mathematics).

Students will gain skills in quantitative finance that will enable them to embark on a range of careers throughout the financial services industry with a particular focus on derivative pricing, risk management, and fund management. Graduates will typi-
cally find employment within investment banking, the hedge fund industry, insurance, and asset management.

Course duration: 1 semester

For more information please contact:
Faculty of Applied Mathematics
Professor Marek Capiński
email: marek.capinski@agh.edu.pl

Summer School of Mining Engineering

The Summer School of Mining Engineering is run by the Faculty of Mining and Geoengineering, and it covers the following subject areas:

- Underground hard coal mining
- Metal ore mining
- Openpit mining
- Salt mining
- Economics in mining
- Occupational risk in mining
- Mining and the environment
- Ventilation in underground coal mines
- Geomechanics in mining

A summer course of Mining Engineering offers an excellent opportunity for foreign students to benefit from a valuable exchange of information and professional development.

http://www.gorn.agh.edu.pl

Course duration: 19th July – 30th July
Summer Semester in Krakow

Summer Semester in Krakow is an offer designed especially for American students. Students can come to Poland for a period of approximately six weeks during the summer and take some selected courses of their interest. Courses are organised by the AGH University of Science and Technology and conducted in English. The programme creates a unique opportunity for international students to learn more about central Europe, and Poland in particular.

http://dwz.agh.edu.pl/en/home/summer-semester

Course duration: 7 weeks, usually from 1st June to 17th July

Fees: Participation fee depends on the exchange rate of US dollar (USD) to Polish zloty (PLN), and the number of course participants.

For more information please contact:
at AGH-UST – Professor Janusz Gołaś: igolas@agh.edu.pl
at SDSU (California, USA) – Professor Janusz Supernak: supernak@mail.sdsu.edu
at MU (Oxford, Ohio) – Carter Hamilton, PhD: hamiltonbc@muohio.edu
Cursos de Veranos – Summer Courses

Summer Courses organized for students from both Americas, particularly for Mexican students. Both English and Spanish are used in the process of studying. During their stay at the University, students do some laboratory hours, as well as trips to industrial plants (depending on the course).

www.summer-courses.agh.edu.pl

Course duration: 4 weeks

Fees: $1300 (tuition $900 + trips $400) – please note that this fee has been calculated for a group of 24 students and may be subject to change.

For more information please contact:
Czesław Grzbiela, DSc – Summer Courses Co-ordinator
phone: +48 12 6332284
email: grzbiela@agh.edu.pl