information booklet

# EDUCATIONAL GUIDE

West Pomeranian University of Technology in Szczecin

# DEAR CANDIDATES

You are warmly invited to commence studies at the West Pomeranian University of Technology in Szczecin (Zachodniopomorski Uniwersytet Technologiczny w Szczecinie). Our University was founded in 2009 as a result of two public universities being merged the Szczecin University of Technology, (Politechnika Szczecińska), the oldest university of the City of Szczecin (founded in 1946), and the Agricultural University of Szczecin (founded in 1954).

Currently, the university has 11 faculties where nearly seven thousand students are studying at 40 different programmes. We have 7 programmes in English at 5 faculties.

The West Pomeranian University of Technology in Szczecin has been cooperating for years with various companies of the region, which assures to our graduates finding jobs after their graduation. The university also offers the students the development of their interest in numerous students' research centres, sports clubs and also acting in the Students' Self-Government Parliament.

**We warmly welcome you – please get acquainted with our education offer.**

# ENROLMENT PRINCIPLES

## General requirements

The enrolment in the studies at the West Pomeranian University of Technology in Szczecin is held twice a year:

- **summer enrolment (April July)** for studies, starting from the winter semester
- **winter enrolment (September-December)** for studies, starting from the summer semester (only applies to second-degree studies).

Candidates for the first-degree studies are qualified on the basis of the presented secondary school-leaving certificate.

Candidates for the second and third degree studies are qualified on the basis of the graduation degree of university education.

**Enrolment in studies consists of several stages:**

- stage 1. Online registration
- stage 2. Initial verification of supporting documents to confirm previous education
- stage 3. Submission of required documents
- stage 4. Confirmation of the results of the qualification

## Online registration

The online ragistration the first and necessary element of enrolment in higher education studies. Each candidate is required to register with the ISR in accordance with the schedule published for a given enrolment.

In the ISR, candidates fill in the information on:

- **personal data**
- **previous education** (secondary school leaving certificates, degrees etc.) along with the grades being supplemented
- **chosen study programme**

## Language requirements

For the programmes taught in English, the candidate must present a document confirming their knowledge of English at a minimum level of B2.

Most commont types of documents certifying the knowledge of an English language accepted by West Pomeranian University of Technology in Szczecin:

- Test of English as a Foreign Language (TOEFL),
- International English Language Testing System IELTS—over 6 points,



- Certificates confirming knowledge of foreign languages at least at B2 common reference level of language proficiency according to “Common European Framework of Reference for Languages: learning, teaching, assessment (CEFR)” issued not earlier than 2 years before, eg.: First Certificate in English (FCE), Certificate in Advanced English (CAE), Certificate of Proficiency in English (CPE).

## Foreign documents about education.

Candidates can be admitted to a given programme on the basis of presented educational documents:

- For undergraduate programmes – secondary school certificate along with the list of assessments entitling its holder to enter university education in the country under which educational systemthe certificate was issued;
- For graudate programmes – official bachelor degree diploma along with the diploma supplement/transcript of records entitling its holder to enter university education (graduate level) in the country under which educational system the diploma was issued.

## Legalisation of foreign documents

Foreign secondary school certificates/bachelor degree diplomas must be properly legalized or provided with an apostille.

The legalization of foreign documents on the education level (secondary school leaving certificates and degrees of higher education) confirms formal compliance of the document with the law of the place it was issued or the authenticity of signatures and seals placed on the document.

If the country in which the document was issued is not a party to the Hague Convention (Convention abolishing the requirement of legalization of foreign public documents drawn up at The Hague on 5th October 1961), then, it is to be legalized by a Polish consular post in that country (relevant for the given country).

## Apostille

When the country in which the document was issued is a party to the convention abolishing the requirement of legalization of foreign public documents drawn up at The Hague on 5th October 1961 (Journal of Laws of 2005 No. 112, item 938), the duty to legalize the document is replaced by an apostille attached to the document.

Detailed information on enrolment principles, deadlines and formal requirements is available at the following website: **www.admission.zut.edu.pl**

Inquaries related to admission requirements should be send to:
Email: **admission@zut.edu.pl**

# STUDIES WE OFFER FOR YOU

# FIELD OF STUDY: ECONOMICS

## FACULTY OF ECONOMICS

**LEVEL AND FORM OF STUDY** – BA/FULL-TIME (6 SEMESTERS)
**TUITION FEE** – .....

Studying economics at the ZUT Faculty of Economics, you will learn how to make efficient economic decisions and solve economic problems. You will acquire broad knowledge in economics and the functioning of an organization with the use of modern technologies. In the future, you can find employment in economic units of business enterprises, in government and local government administration, in financial, insurance and consultancy institutions, real estate companies, in accounting and tax offices. In addition, the studies at the Faculty of Economics will prepare you to run your own business.

The studies in economics of a general academic profile are of the first-degree and they have the form of full-time, day studies. The aim of education is for the student to acquire general knowledge in the field of social sciences, economics and finance.

### The study programme includes two majors, starting from the 4th semester (to be chosen):

**1. Accounting and Finance in Economic Entities**
the graduate will acquire knowledge in the field of organization, operation and financing of economic entities, differing by their organizational and legal forms. The skills acquired will allow them to interpret independently the information contained in the entity's financial statements. The graduate of this special field will be able to recognize the economic risk, credit risk included, to monitor and limit it. They will be able to work in financial and accounting departments of various entities which conduct business, in advisory services, banks and public finance sector entities, as well as, to undertake further education at the second degree studies and to prepare independently for specialized exams in accounting.

**2. Property Valuation and Real Estate Transactions**
the graduate will have acquired comprehensive knowledge in the field of real estate law and market, as well as, real estate resources, research methods and evaluation of phenomena, which take place in various segments of the real estate market. The skills acquired will allow them to apply independently analytical methods, so as to study real estate markets and resources owned by the State Treasury, local self-government entities, other legal and natural persons. The graduate will have the skills to assess and forecast processes at the micro and macroeconomic scale and to provide advisory services in the field of real estate management, property valuation and adopting decisions on the real estate purchase or sale and other forms of real estate trading. The knowledge gained during the education process will prepare them to take up professional practice in order to obtain the license in the field of real estate appraisal.



### Examples of subjects during the studies:

- Acountancy
- Contemporary management concepts and methods
- Economic analysys
- Economic and enviromental consulting
- Economic projects using EU funds
- Economics of Consumption
- Economics of European integration
- Entrepreneurship
- Environmental protection finance
- Ergonomics
- Finances and Banking
- Financial Accounting firms
- Foundations of demography
- Foundations of human behaviour in the labour market
- Foundations of industrial economics
- Information Technology
- International economic and political organisations
- International Economic Relations

### More information:

Contact person: Prof. Joanna Hernik
e-mail: jhernik@zut.edu.pl

Contact person: dr Anna Oleńczuk-Paszel
e-mail: anna.olenczuk-paszel@zut.edu.pl

Address of the faculty:
Zolnierska street 47
71-210 Szczecin, Poland

# FIELD OF STUDY: CHEMICAL ENGINEERING

## FACULTY OF CHEMICAL TECHNOLOGY AND ENGINEERING

**LEVEL AND FORM OF STUDY** – BSC/FULL-TIME (7 SEMESTERS)
**TUITION FEE** – 4200PLN/semester

### What is Chemical Engineering?

Chemical engineering is a bridge connecting chemistry (chemical reactions in test tube) to the real world outside laboratory. Chemical engineers find methods for increasing the laboratory scale of processes to an industrial scale. For this purpose, based on knowledge of physical, chemical and biological phenomena, they apply engineering principles to: invent, design, develop and implement processes, manage and operate processes, design and improve products. Chemical engineering is, first, knowledge of processes and appliances in industrial systems, ability to design and supervise the operation of industrial systems.

### What does such an engineer do, what does his / her job look like?

Chemical engineer primarily deals with the design of processes which involves developing new processes, designing equipment and systems for processes, controlling a process or improving the process. Engineers, graduates of Chemical Engineering deal with physical and chemical changes (such as chemical and biochemical reactions, momentum, heat and mass transfer processes) on different scales, i.e. on the molecular level (how molecules react), on the process level (as changes occur in apparatus), on the system level (which way processes can be related to each other) and on the global level (logistics, management, environment).

### Where can a graduate work?

Chemical Engineering makes it possible to achieve many attractive professional careers in the country and abroad. Engineers with the speciality of Chemical and Process Engineering are easily able to find employment in small and large companies with a wide range of activities. Process Engineer is still one of the best-paid professions in the world. Our graduates are specialists needed in the chemical and refining, natural gas treatment, rubber, food and pharmaceutical, energy and heating industries, municipal and sewage treatment plants, process equipment construction, design offices, consulting companies, environmental control services, safety, industrial hygiene, in laboratories and research institutes. Graduates, who do not want to work in the industry can easily find employment in other sectors because they acquired skills in solving modern engineering problems at university. They possess skills in engineering analysis and management. Chemical engineer can prepare technical documentation and has the appropriate qualifications to participate in research and development projects focused on the needs of the industry. Examples of companies that employ chemical engineers from WPUT Szczecin are Grupa Azoty Police S.A., Fosfan S.A., Terminal LNG im. Prezydenta Lecha Kaczyńskiego w Świnoujściu, Oczyszczalnia Ścieków Pomorzany, Browar 'Bosman' w Szczecinie, Polski LNG, Kabel-Technik-Polska Sp. z.o.o. and many more.



### What does the wide range of scientific research look like?

### What projects do students work on?

Classes in Chemical Engineering are conducted by competent and qualified staff. Students have access to the latest simulation and process optimisation software and modern, well-equipped laboratories. The high quality of education is confirmed by the qualification of Chemical Engineering in the Shanghai ranking. The high quality of didactics coincides with the research carried out by the scientific and didactic staff. During their studies, students have the opportunity to cooperate with scientists as part of research projects financed from external sources. As part of these projects, students can pursue their scientific interests as well as obtain direct contact with academic teachers. What skills will students obtain during their studies? By studying Chemical and Process Engineering you will gain a wide range of skills. You will have universal technical knowledge in chemistry, physics, mathematics, biochemistry, mechanics, material engineering and computer science. You will learn the basics of economics, management, safety and environmental protection. You will gain the ability to apply the latest achieve-ments in the field of computer-aided design of processes. A student of Chemical Engineering will acquire knowledge in various fields, e.g. science, technology, information technology, economics, management, entrepreneurship, security, health and the environment. You will acquire the ability to design apparatus and processes (e.g. manufacture of chemicals and pharmaceuticals, processing of polymers and food products, energy production, processing of oil and gas, environmental protection), products (e.g.: chemicals, polymers, consumer products, food products, pharmaceuticals) as well as production apparatus and systems.

### Why choose bachelor's degree in chemical engineering in Szczecin?

Szczecin has a fantastic reputation for Chemical Engineering, but here are a few more reasons why you should study here:
Chemical Engineering in Szczecin is the 3rd best chemical engineering study in Poland (Perspektywy Ranking 2019). All our Chemical Engineering courses are developed according to American standards of education. The Faculty has fantastic industry links with companies such as Grupa Azoty Police S.A., Fosfan S.A., Terminal LNG im. Prezydenta Lecha Kaczyńskiego w Świnoujściu, Oczyszczalnia Ścieków Pomorzany, Browar 'Bosman' w Szczecinie, Polski LNG, Kabel-Technik-Polska Sp. z.o.o. and many more. Every year, huge funds are invested in the reconstruction of the Faculty's laboratories, including student and research laboratories, computer laboratories and lecture halls. We have a strong and growing research programme with world-class research activities and about 50 full-time academic staff plus PhD students, postdoctoral research fellows and visitors from across the world.

### More information:

Contact person:
Halina Murasiewicz
e-mail: halina.murasiewicz@zut.edu.pl
tel. +48 91 449 49 64

Address of the faculty:
al. Piastów 42, Szczecin
chemeng.zut.edu.pl

# FIELD OF STUDY: MATERIALS SCIENCE AND ENGINEERING

**LEVEL AND FORM OF STUDY** – BSC/FULL-TIME (7 SEMESTERS)
**TUITION FEE** – .....

## What is Materials Science and Engineering?

Materials science and engineering (MSE) is an interdisciplinary field focused on the design, fabrication, and characterization of new materials, including polymers, ceramics, metals, and composites. Novel, advanced materials play key roles in diverse applications, including energy capture and storage devices, sustainable and advanced packaging materials, biomaterials, and more. As a result, by applying fundamental science in the pursuit of beneficial engineering solutions, MSE has a major societal impact. Based on knowledge of the underlying physical, chemical, and biological phenomena, material science engineers are able to design and study new materials at various length scales, ranging from the atomic and molecular and nanoscopic level to that of macroscopic, complex systems, including various devices. Importantly, the cutting-edge applications that can overcome major societal challenges require a detailed understanding of the relationships between the structure of a material and its properties. This knowledge can be used to tune materials for advanced technologies, ranging from biosensors and functional surfaces to aerospace composites and medical device platforms. Ultimately, MSE covers all aspects of research and innovation in the field of materials: from basic science to the design and synthesis of materials, from characterization to advanced processing, while also including regulatory and quality management aspects.

## What does such an engineer do, what does his / her job look like?

Materials science engineers design, develop, process, and test materials for a wide range of practical applications, such as electronics, coating, packaging, biotechnology and medical device industry. They study the structure and properties of metals, ceramics, polymers, as well as their composites. Day-to-day, materials science engineers may be involved in all aspects of materials development, ranging from the synthesis of new materials, to advanced processing, such as 3D printing or photolithography, or characterization, such as spectroscopy, atomic force microscopy, or mechanical testing. In this fashion, by enabling the manufacture of new materials that meet certain chemical, electrical, and/or mechanical requirements, they facilitate the development of new products/applications or the improvement of existing technologies. Further, they can also be involved in selecting existing materials for specific products/applications or developing new strategies and pathways for leveraging existing materials.



## Where can a graduate work?

Material Science and Engineering graduates are highly trained, interdisciplinary specialists with may attractive professional careers in Poland and abroad. Because they are at the forefront of technological developments, they are able to find employment in a range of existing sectors, including aerospace, automotive, energy, pharmaceuticals, and telecommunications. Further, developments in the MSE field, for example nanotechnology or the use of advanced composites, can result in new sectors and new job opportunities being created. Finally, novel, advanced materials play key roles in addressing the major societal problems of today, including pandemics, aging populations, and climate change. As a result, there will be growing demand for engineers trained in MSE.

Material science engineers mostly work in office buildings, laboratories, or industrial plants. Their job responsibilities will vary according to the size and type of company, but they will typically be involved in interdisciplinary teams engaged in developing, modifying, testing, or evaluating materials. This can be from the standpoint of research and development or perhaps determining the causes of product failure and developing ways of overcoming such situations. Materials science engineers may also be called upon to provide technical advice regarding the suitability of an existing material for an application or may be involved in monitoring and controlling the quality of a manufacturing process. Finally, of increasing importance is the task of evaluating the impact of materials and their processing on the environment.

Depending on their career stage, MSE graduates may be responsible for supervising a team in academia or industry that includes technicians, technologists, scientists, and engineers. Importantly, graduates that who ultimately decide they do not want to work in the materials science field can easily find employment in other areas, because the MSE curriculum is inherently multidisciplinary. At the same time, the fundamental concepts in physics and engineering, as well as the acquired skills, including teamwork, problem solving, advanced analysis, are readily transferable to other fields. Graduates will possess skills in engineering analysis and management, so they may be engaged in various aspects of diverse research and development projects. Further, they can find employment in other areas such as in regulations/oversight, technical documentation, or aspects dealing with intellectual property.

## What does the wide range of scientific research look like?

## What projects do students work on?

Classes in Materials Science and Engineering are conducted by competent and qualified staff. Students have access to the latest simulation and design software and programs such as CHEMCAD, Aspen, AutoCad, Statistica, MathCad, Solidworks, Matlab and modern, well-equipped laboratories. You will acquire knowledge in various fields such as mathematics, physics, biology, chemistry, engineering, and technical sciences, spanning from material synthesis to manufacturing and processing and finally methods for detailed characterization of material properties.

Importantly, you will be involved not only theoretical preparation, but also included in practical approaches towards solving complex, materials-related engineering tasks. Additionally, you will develop skills including critical analysis and synthesis of information, selection and use of appropriate methods and tools, including the use of the available knowledge bases and sources. Further, during your education you will have opportunity for hands-on engagement and experimental work with a range of materials, including as metals, ceramics, polymers, and (nano)composites. Finally, you may be engaged in various on-going research projects into novel materials, such as for advanced packaging, energy storage, drug delivery, medical devices and more.

Subjects that are taught include: Structure of Solids, Materials Processing, Surface Science and Interfacial Phenomena, Mechanics of Materials, Introduction to Experimental Materials Science: Nanomaterials Emphasis, Introduction to Experimental Materials Science: Biomaterials Emphasis, Functional Properties of Materials, Chemical and Biochemical Engineering, Smartand Nanomaterials, Introduction to Biomaterials: Drug Delivery and Biosensing and more.

## WHY CHOOSE BACHELOR'S DEGREE IN Materials Science and Engineering IN SZCZECIN?

Our University, ZUT is new—established in 2009—but the MSE program traces its roots to the Faculties of Mechanical Engineering and Chemical Engineering of the original School of Engineering in Szczecin, established in 1946. In 1955 that school transformed into the Technical University of Szczecin, before ultimately merging with the University of Agriculture in Szczecin to form ZUT in 2009. In this way, the MSE program offers a unique combination of tradition plus modernity, as exemplified by the cutting-edge Center for Nanotechnology which opened in 2013.

Importantly, as the University has grown and evolved, we have not lost sight of maintaining an emphasis on quality and not quantity. Your class sizes will be small, typically less than 15 students, enabling you to receive individual attention, tailored to your needs. Plus, you will have access to cutting-edge research labs, including in the Center for Nanotechnology, and not just teaching labs. This emphasis on quality is well reflected in international rankings: ZUT was ranked 16th overall by EngiRank in „New Europe" Engineering Programs and—more importantly—it placed 11th in terms of overall Quality of Teaching; in terms of Materials Engineering specifically, it finished 3rd.

Ultimately, it is our goal to educate engineers that are prepared to make an impact in the world. In this regard, in the recent "Perspectives" ranking of all Polish Universities, ZUT finished first in the Innovation category, reflecting our strengths in combining creativity and engineering. It should be no surprised that we have extensive collaborations with regional industrial partners, enabling visits, internships, and networking/job opportunities. A few examples include Bridgestone, Grupa Azoty, Betonstal, Habia Cable, DGS, Ferrosan Medical Devices, and more.



Szczecin may be far from Warsaw, in the corner of Poland, but it has an international airport and is less than 150 km from Berlin—a gateway to the World. Meanwhile, the proximity to the sea offers a convenient ferry link to Scandinavia—not to mention beaches and relaxation. So, our unique location is actually quite perfect! Likewise, Szczecin is a small city, so it's easy to get around and quite affordable, but it has extensive big-city amenities, including Philharmonic, Opera, Theaters, and Museums. When you combine this with extensive green spaces and a recently renovated riverfront, Szczecin can really be the perfect city for you to study in. Meanwhile, once you graduate, Szczecin may also be the right location for you to start your career. Szczecin and the surrounding region offer excellent economic diversity and competitiveness, including a range of industries from biotechnology and biomedicine to information and communications technology (ICT) and the maritime industry. There are two EU Special Economic Zones, the Green Chemistry Cluster, and Technopark Pomerania—all in addition to the many individual companies already mentioned, so there will be many career opportunities available for you.

## More information:

Contact person:
Halina Murasiewicz
e-mail: halina.murasiewicz@zut.edu.pl
tel. +48 91 449 49 64

Address of the faculty:

al. Piastów 42, Szczecin
chemeng.zut.edu.pl

# FIELDS OF STUDY: AQUACULTURE AND FISHERIES

**LEVEL AND FORM OF STUDY** – full-time, 1st cycle

**TUITION FEE** – .....

## Why has the faculty decided to launch such a field of study?

The need to create the field of study is the result of many years of observation and experience, resulting from conducting classes for foreign students coming to the Faculty as a part of Erasmus and Erasmus+ mobility, whose number is growing every year.
Aquaculture and Fisheries is a field of study intended for individuals, both from EU and non-EU countries, who are interested in acquiring knowledge and experience in aquaculture and sustainable fisheries, aquatic food safety and the protection of aquatic ecosystems. The course is addressed to those interested in large-scale aquaculture and fisheries (Vietnam, China, Turkey, India) and those who are planning to engage in production and obtaining of aquatic organisms on a local scale.

According to the Food and Agriculture Organization of the United Nations (FAO), sustainable aquaculture is a very important industry that can provide the world with a source of high value animal protein that is essential in feeding the ever-growing number of human beings on our planet. This is why one of the pillars of Aquaculture and Fisheries is sustainable aquaculture, understood as a combination of innovative solutions, eco-intensive production and attention to every aspect of production, from the quality and origin of feed ingredients to optimum breeding conditions, high levels of biosecurity, welfare of the organisms bred, protection of the aquatic environment and certification of production (ASC).

The second pillar of the field of study is Fisheries (sustainable use of aquatic resources), which is also an extremely important field of economy, provided that it is done with respect for the rights of nature, expressed also in international certificates (MSC) and in support of small-scale fisheries being the least harmful to the environment.

Nevertheless, sustainable aquaculture will supply more than 50% of aquatic protein in the next 5 years.

## Thematic scope what will you learn?

Graduates will be high-class specialists, able to use the skills acquired during their studies at the Faculty of Food Sciences and Fisheries in technological and production processes as well as in educational processes in compliance with the principle of „sustainable aquaculture and fisheries" and adapting the principle to the needs of the industry in which they work.

Graduates will be prepared to do work related to aquatic animal raising and breeding, sustainable fisheries and proper management of waters, especially the living elements of the aquatic environment. The skills gained within the major subjects will enable them to act in the field of aquatic protein production (with knowledge of the safety of this type of food), sustainable management of natural resources taking into account the requirements of protecting and improving the quality of the aquatic environment, in areas such as: management as well as chemical and biological monitoring of waters, shaping the resources of aquatic biocenoses and their sustainable use, protection of the aquatic environment and reclamation of aquatic ecosystems. In addition, the skills gained will form the basis for independent analysis of the information acquired and decision making in the broad area of sustainable aquaculture, exploitation, shaping and protecting of the aquatic environment inhabited by a wide range of plant and animal organisms.

## What makes this course different from others available in the country (and perhaps abroad)?

No other university in Central Europe offers such a comprehensive field of study related to aquaculture and fisheries in English. Compared to similar courses conducted abroad, the innovation is the combination of two different, but very important, ways of obtaining aquatic animal protein. In addition, because of the variety of subjects offered, the field of study provides students with the opportunity to learn about key and current issues within the scope of breeding and sustainable use of fish and other aquatic organisms.
For students from Asia and Africa, a new feature offered by Aquaculture and Fisheries will be the opportunity to learn about cutting-edge European aquaculture technologies (especially mariculture). The course constantly updates its content based on the results of the study and feedback from various groups of the stakeholders to become internationally recognized with a global reputation for high-quality teaching and research.
job perspectives

## Anticipated places of employment for graduates:

- in facilities dealing with aquaculture of fish, invertebrates and algae,
- in supervision of the work at hatcheries in stocking centres,
- in public administration units,
- in organisations dealing with certification of aquaculture and fisheries,
- in water quality and environmental protection laboratories,
- in units implementing modern water reclamation technologies,
- in units dealing with water management organisation,
- on Polish and foreign fleet vessels,
- in companies designing modern fishing tools safe for the aquatic environment,
- in water tourism companies,
- in their own fish breeding business.

## Apprenticeships, work placements, benefits

A possibility for apprenticeship in the following companies: “Jurassic Salmon” “Ińskie Centrum Rybactwa”, in the WPUT Experimental Station in Nowe Czarnowo as well as in MSC (Marine Stewardship Council) in Warsaw and with Prof. Grubišica (University of Split, Croatia) a graduate of our faculty specialising in marine tuna breeding.
Lectures of „Visiting Professors” e.g. from University of Tasmania (Prof. Barbara Nowak, a graduate of our faculty), with Prof. Selmin Oezer, Mersin University, Faculty of Fisheries, Turkey, with Dr Nguyen Tuan, Vinh University, Vietnam (a doctoral student of our faculty), with Director Anna Nowicka, MSC Polska (webinar).

## More information:

Contact person:
Arkadiusz Panicz
e-mail: arkadiusz.panicz@zut.edupl
tel. +48 91

Address of the faculty:

ul.Kaziemierza Królewicza 4
71-550 Szczecin

# FIELD OF STUDY: BIOTECHNOLOGY

## FACULTY OF BIOTECHNOLOGY AND ANIMAL HUSBANDRY

**MAJOR:** BIOTECHNOLOGY IN ANIMAL PRODUCTION AND ENVIRONMENTAL PROTECTION
**LEVEL AND FORM OF STUDY** – MSC/FULL-TIME (3 SEMESTERS)

Biotechnology is a field of study that combines technological competence with the ability to use living organisms in animal and plant production, environmental protection, food processing and production, biomaterials generation and many other domains. During your studies, you will acquire extensive knowledge and skills in the fields of biochemistry, microbiology, environmental protection, genetic engineering and many other technical and natural fields. We guarantee that you will spend a lot of time in the laboratories, not only in the course of the teaching classes, but also on carrying out your own projects, i.e. getting to know the practical side of your future profession.

After graduation, you will be able to describe and explain complex biotechnology processes, you will have knowledge helpful in developing and optimizing biotechnological processes and their conditions. You will acquire information about cellular engineering, genetic modification of organisms and its importance for humans and the natural environment. You will learn the techniques used in the analysis and modification of nucleic acids and proteomics. You will understand the principles of modern breeding and the role of biotechnology in its improvement.

The graduate is given the opportunity to develop professionally in the field of biotechnology as applied in international or foreign companies, corporations or institutions. The graduate is able to conduct processes aimed at obtaining products with desirable characteristics and to carry out research related to the protection of the natural environment. The graduate can apply basic and advanced analytical and research equipment as well as technological devices in accordance with the principles of safety and ergonomics of work in the laboratory. They are able to plan and carry out independently biotechnological research, including innovative research useful in the development of many branches of industry and agriculture, as well as to interpret the results obtained. The graduate knows how to apply properly statistical methods used in biotechnology, as well as modern computer programs used in modelling, bioinformatic analyses and data processing. They know the ethical, bioethical and legal conditions as well as those with regard to the implementation of biotechnological processes. They have the knowledge about the principles of intellectual property protection. The graduate has a thorough professional knowledge and skills as well as competences necessary to perform professional work related to biotechnology.



The graduates are prepared to work in entities, dealing with biotechnological processes used in animal production and environmental shaping, as well as, in entities related to the agri-food industry. In addition, they are prepared to work in state administration entities as well as research and development units dealing with biotechnological and related industries as well as in research, control and diagnostic laboratories.

### More information:

Prof. Paweł Nawrotek
e-mail: pawel.nawrotek@zut.edu.pl

Dr hab. Karol Fijałkowski
e-mail: karol.fijalkowski@zut.edu.pl

# FIELD OF STUDY: CIVIL ENGINEERING

**MAJORS:** ENGINEERING STRUCTURES, INTERNATIONAL CONSTRUCTION MANAGEMENT
**LEVEL AND FORM OF STUDY** – MSC/FULL-TIME (3 SEMESTERS). 90 ECTS points
**TUITION FEE** – 4100 PLN/semester

New developments in the construction industry with growing demands focused on innovative, sustainable technology and construction management require modern professionals with new competences prepared for international markets. We will work on those new skills in international environment of studies and with the use of up-to-date tools. The academic staff will consist of both Polish and international professionals skilled in construction, management and experienced to work in international environment.
We will prepare you to work in international construction teams, including skills dealing with various cultural, social and geographic conditions. After the 2nd semester you will be able to deepen your knowledge and skills, having the opportunity to avail yourselves of internship programmes in companies experienced in running projects in international teams. You will also be able to take advantage of student exchange in Erasmus+ mobility programme (studies abroad for one semester and internship).

Our graduates will find a job in construction companies, design offices, research institutions. Managers of various companies are looking for graduates skilled to work in international teams, ready for new challenges, with very good communication skills, who are able to prepare and present research results. Studying in international environment will give you the ability to work with people of different cultural background, with better understanding of other points of view, to learn how to negotiate and how to understand a team work.

Your graduation degree will not differ from the typical Polish one if both professional and academic licenses are considered. In your diploma supplement all your academic achievements will be listed in English, including the period of studying at foreign universities, if any. ECTS points are used to show your study results. Spending 1.5 years in Szczecin and meeting a growing number of people at the University and beyond will give you an excellent opportunity to plan your professional career in Poland or abroad.
You will join a large group and enjoy the worldwide spread of the graduates of our University with over 75 years of tradition.

Focused on construction management skills in international environment, e.g.: Applied Construction Management, International Tender Management, Social Aspects in International Construction Industry, Cost Management in Construction, Strategic Management in Construction, BIM in Construction Management, International Construction Seminar.
Complementary knowledge on modern world and history, e.g.: History of Architecture or Art, History of Civil Engineering, Current Developments in Civil Engineering and Built Environment, Sustainable Design and Environmental Engineering, Ethic and Social Aspects of Economic Activity, Polish Language and Culture.



Forming civil engineering professional skills, e.g.: Complex Concrete and Metal Structures, Mathematics, Theory of Constructions, Advanced Concrete Structures – International Perspective, Special Foundations, Innovative Developments in Construction, International Construction, Research Skills, Technical English, Internship in construction company running international projects in Poland and worldwide.

**Note: Only graduates of civil engineering (bachelor)will be admitted to this programme.**

## More information:

Contact person:

dr. Andrzej Pozlewicz
e-mail: andpoz@zut.edu.pl

Adress of the faculty:
al.Piastów 50a
70-311 Szczecin

# FIELD OF STUDY – MATERIALS ENGINEERING

**MAJOR:** LIGHT-WEIGHT STRUCTURES, PROCESSING OF POLYMER MATERIALS
**LEVEL AND FORM OF STUDY** – MSC/FULL-TIME (3 SEMESTERS)
**TUITION FEE** – 4500 PLN/semester

The studies at the Faculty of Mechanical Engineering and Mechatronics help the students to acquire knowledge in the field of structure and properties of metallic, polymer and composite materials, of their research methods, of combined structures production, material technologies, design and production of polymeric products, metals, composites and biomaterials.

The study syllabus is based on the highest standards, and the classes are implemented, among other things, in laboratories equipped with research stands and modern measuring equipment. Our teaching staff constantly improves their qualifications by carrying out scientific and research work, participating in symposia, contacts with industrial partners, etc. Many lecturers have experience in the industry gained domestically and abroad, thanks to which they combine theoretical knowledge with practical and problem--solving skills.

Our graduates are:
- product designers in metallic, polymeric, ceramic and composite materials,
- engineers,
- material technologists,
- specialists in production quality control,
- specialists in recycling and green technologies.

## Light – weight structures

The studies expand the knowledge in the field of lightweight polymer construc¬tion composites, including biocomposites, versatile applications in aviation, shipbuilding, in a variety of mobile systems such as motor vehicles, buses, rail vehicles, rotors of wind farms with increasing dimensions, sports and recreational equipment, and many other areas of life, where high stiffness, impact resistance and lightness are required.
Students acquire the knowledge in the field of processing techniques, product design skills, specialized mechanical and non-destructive tests, operational dura¬bility assessment and recycling possibilities of lightweight constructions.

## Processing of polymer materials

The studies prepare students to design and construct technological equipment for the processing of polymeric materials, to choose strategies in the selection of materials for specific products, taking into account the conditions of their ope¬ration. The students acquire knowledge on modern methods of materials testing and methods for obtaining special construction materials based on polymers and polymer composites.

## Why has the faculty decided to launch such a field of study?

Nowadays the progress in civilization wouldn't be possible without modern materials. There would be no airplanes, space flights, advanced electronics, miniaturization, implants or better and better sport achievements. A variety of modern materials and their constant development make our lives more interesting, more comfortable, safer and longer.

Materials engineering deals with the principles of development and improvement of materials by providing them specific functional properties and characterizing their structure and features. It is an interdisciplinary branch of science, that combines the engineering expertise with knowledge of materials structure and technology, which are irreplaceable in the selection of the most appropriate materials during the design process of each device. For that reason materials engineers are desired by all kinds of industries which provide products on the market or exploit different machines or devices.

The Materials Engineering second-degree study programme at Faculty of Mechanical Engineering and Mechatronics is addressed to Bachelors in different fields of science, who: are interested in modern materials, particularly polymers and polymer construction composites – light but strong, and want to contribute to their development, would like to extend knowledge on materials structure, their functional properties, physical or chemical modification towards improved performance of final products, would like to learn how design and develop materials and composites applicable in aviation, shipbuilding, automotive, wind farms, medicine or sport equipment, are interested in polymer processing and designing / constructing technological equipment to improve processing in order to provide final products to automotive, transport, medical, chemical, packaging, electronics, and other industries.

This study is suitable for both foreigners and Polish students who would like to get advanced in English nomenclature in materials science.

## Thematic scope what will you learn?

The study programme provides education in the fields of advanced research methods, design, manufacturing and utilization of engineering materials – polymers, metals, composites, and technological processes. It is based on advanced knowledge of physics, chemistry, mathematics and materials science as well as on engineering knowledge in modelling, designing and processing of materials. To overview the study courses in details please visit the webside: http://www.krk.zut.edu.pl/pl/2020-2021/wydzial-inzynierii-mechanicznej-i-mechatroniki/inzynieria-materialowa-w-jezyku-angielskim-S2/sylabusy.html

## What makes this course different from others available in the country (and perhaps abroad)?

The Materials Engineering as the first study programme in English at the West Pomeranian University of Technology, received the prestigious European quality certificate EUR-ACE ® Label, granted by Accreditation Commission of Universities of Technology (KAUT). The EUR-ACE ® Certificate confirms the high level of engineering degree education being in accordance with European standards and principles. In consequence our graduates receive the Certificate which confirms that they are well prepared to meet the industrial requirements and challenges. It also opens more perspectives for employment in European industry.

The high quality of education at Materials Engineering was also appreciated in European Ranking of Engineering Programms (EngiRank in short) which classified our study programme at 2nd position within 13 countries of the so-called New Europe (ie. countries that joined the European Union on or after 2004) and at 1st position (ex aequo with Warsaw University of Technology) within 55 Polish technical universities. The international Council assessed both the scientific activity of the university staff in the materials science as well as high standards of education delivered to our students within 2014 – 2018. These are the best reasons to become a Student of Material Engineering at Faculty of Mechanical Engineering and Mechatronics.

## Job perspective.

The Materials Engineering 2nd degree study programme is for young peaople looking for a fascinating job in many different sectors of industry: automotive, aircraft, transporting, medical, chemical, packaging, machines, steel constructions, etc.

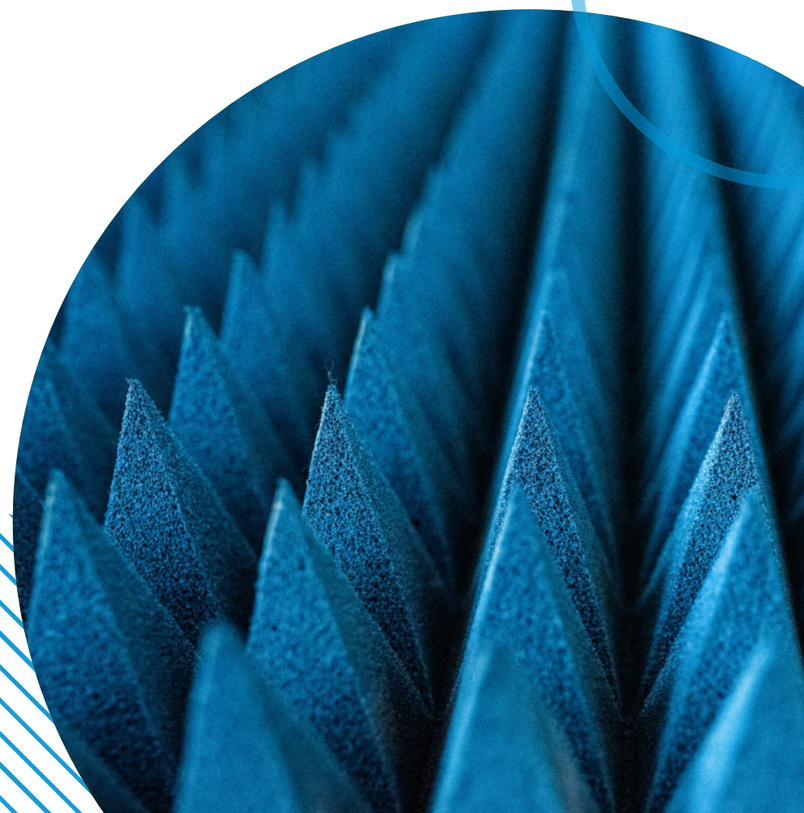
Our graduates are working as:

- technologists supervising production processes and quality control in production companies, in departments for the production of metal products, ceramics, polymer materials, composites, and others,
- materials engineers supporting the product designers in the selection of appropriate materials and processing technologies when the new products and devices are designed,
- materials designers with expertise in development of new advanced materials with specific functional properties, tailored to specific applications, eg. sophisticated prothesis or exoskeletons for medicine, extremely resistant alloys for aircraft and aerospace, electrically conductive transparent materials for photovoltaics, and so on,
- project engineers responsible for product / device / construction manufacturing process based on a customer requirements and product exploitation conditions,
- specialists in non-destructive and destructive testing of materials or constructions for certification, standards, opinions, etc.,
- consultants in the field of production processes / materials processing optimization, solving technological problems and R&D support,
- specialists in the field of rapid prototyping and production of small-series products for the market research or a new product release,
- experts in recycling and environmental friendly technologies.

## Apprenticeships, work placements, benefits.

During the three – semesters study programme Students have to do an internship in a manufacturing company to get some experience and recognize the specific organisation of production. Student can select the company and apply for a training or ask the faculty coordinator for the partner companies offering the internship positions. In every case, however, the student will be invited for an interview.

Students of Faculty of Mechanical Engineering and Mechatronics can take a part in the Erasmus+ programme that helps people to develop and share knowledge and experience at institutions and organizations in different countries. It means that during your study you can apply for continuing your study programme or for an internship in other European country. The international training opportunities are also provided by IAESTE Poland organization that is also available for our students.




# ABOUT OUR CITY
# SZCZECIN

# ABOUT SZCZECIN

## Szczecin, the capital of the West Pomeranian Province.

Szczecin is a city of over four hundred thousand inhabitants located in north-western Poland, the capital of the West Pomeranian Province. In terms of area, Szczecin is the third largest city in Poland (after Warsaw and Cracow) and covers 30 055 hectares. More than one half of the city area is taken by greenery and water, including the Odra and Dąbie Lake flooding areas.

The City is developing very dynamically and cohesively, inter alia owing to the vision of „Szczecin Floating Garden 2050" introduced in 2007. „The Floating garden" is the view of Szczecin when seen from a bird's eye: a lot of greenery, water, and, at the same time, huge spaces suitable for cohesive development.

Tourists, employees on business trips and prospective students will immediately notice in the urban space the facilities related to the city's development vision. Buses, trams, stops and other city furnishings painted white-blue-and-green, are closely related to the idea of the „floating garden", its openness, cross-border, innovation and multiculture features. White colour is the space, green means urban greenery, and blue stands for water.

Since the beginning of its history, Szczecin has been strongly connected with water. Already in 992, „Dagome iudex" mentions the" Shinesghe River State „, as an element of the fiefdom of the Polish Duke, Mieszko I. The city was still closely related to Poland between the years 1121 and 1181. In the years 1185-1227, the Danes had the supreme authority, there. In 1243, Szczecin was granted civic rights, it began to develop dynamically. Owing to its joining the Hanseatic League, it became an important centre for trading in grain and herring. At that time, the princely family of Griffins (Greifen) reigned in Szczecin and throughout Pomerania. This situation lasted until 1637, when Bogusław XIV the Duke died without issue. The Thirty Years' War weakens the city to a large extent. Between the years 1630 and 1720, Szczecin was under Swedish rule, and from 1720 to 1945 under Prussia/Germany. Between the years 1806 and 1813, Szczecin was occupied by French army. In 1945, Szczecin was taken over by the Red Army, and after the Potsdam Conference, the City was given to Poland, but it was only in 1955 that the soviet army left the port of Szczecin.

There are not many cities in Poland that can be proud of such a turbulent and interesting history. The pagan times, the influences of the Slavic and Germanic tribes, the reign of the Griffins, the supremacy of Poland, the Danish, Swedish, French and German times undoubtedly contributed to the significant development of Szczecin and its openness to multiculturalism.

It is best to start the City sightseeing tour from the Odra Boulevards (Bulwary Nadodrzańskie). From this point, there spreads the beautiful view of the City and its most important monuments, including St. John the Evangelist's Church, St. James' Cathedral, Castle lower town, Pomeranian Dukes' Castle and a complex of buildings in Wały Chrobrego. As a result of very heavy allied's air raids, almost the entire Szczecin's Old Town was razed to the ground, and after the war, its reconstruction was not started. Today, in many places, you can still see attempts to rebuild/reconstruct pre-war structures. Nevertheless, it is worth taking a walk along the track of Szczecin's historic monuments within Bulwarów and Wyszyńskiego, Niepodległości Streets and Żołnierza Polskiego Square.

Contemporary history of the City is very strongly associated with the history of Poland. It was here in 1970, that the workers of the shipyards and other entities protested against the communist authorities; 16 people were killed, then. In August ,80, after the wave of strikes in the Szczecin Shipyard and other workplaces, the „August Agreements" were signed. In 1988, a strike broke out, which led to the Round Table negotiations, and in 1990, the first democratic elections to the City Council took place.

Attempting to learn more about the history of the City, the comers shall visit two museums. The first of them is the Museum of the City of Szczecin, located in the Old Town Hall in Podzamcze. The second is the „Przełomy" (Breakthrough) Dialogue Centre in the Solidarity Square, next to which there is the new pride of Szczecin, that is, the Mieczysław Karłowicz Philharmonic Hall in Szczecin opened in 2014.

Szczecin is a large academic centre with five public universities and a few private schools. Nearly 40,000 students study in the City. They can have a good time in many students' clubs. The „Academic Szczecin" programme is a support for young people. This includes among other things, the City Mayor's scholarship system, flat renting on preferential terms, or lectures by interesting scientists.

The recent years in the development of the City are many infrastructure investments, private and related to the creation of new jobs. One of the City's special features is fostering a pro-development climate for the BPO sector or IT industry. In special economic zones, the logistics industry's high fliers who are constantly looking for highly qualified engineers place their businesses.

Szczecin has also a lot of national and international events, such as The Tall Ships Races - the rally of the largest sailing yachts in the world, Sail Szczecin Sea Days, Pyromagic - fireworks festival, or the Young Talents Festival.

## Selected curiosities about Szczecin:

- Zofia Augusta Fryderyka von Anhalt zu Zerbst or later Tsarina Catherine was born in the city
- St. John the Baptist's Church has a copy of the Turin Shroud,
- Katarzyna Nosowska comes from Szczecin, as well as, Joanna Klepko, known under the pseudonym of „Cleo",
- in the Victory Square, there is the monument to Kornel Ujejski, who came here after the war from Lviv,
- Central Cemetery in Szczecin is the third largest (over 172 hectares) cemetery in Europe after Vienna and Hamburg,
- Pionier Cinema, one of the oldest continuously operating cinemas in the world,
- „Pasztecik Szczeciński" (the Szczecin pasty - a regional product produced in the City without interruption since 1969,
- in 2015, Filharmonia Szczecińska, the Szczecin Philharmonic Hall received the European Union Award in the field of contemporary architecture - Mies van der Rohe Award 2015, the so-called „Oscar in architecture".

# West Pomeranian University of Technology in Szczecin