VŠB TECHNICKÁ UNIVERZITA OSTRAVA | FAKULTA STROJNÍ

Aditivní technologie

Vygenerováno: 2. 5. 2025

Fakulta	Fakulta strojní
Studijní program	Strojírenství
Typ studia	bakalářské
Jazyk výuky	angličtina
Kód specializace	S07
Název specializace	Aditivní technologie
Standardní délka studia	3 roky
Katedra	Katedra obrábění, montáže a strojírenské metrologie
Zodpovědná osoba	prof. Ing.et Ing.Mgr. Jana Petrů, Ph.D.
Oblasti vzdělávání (zaměření)	Strojírenství, technologie a materiály
Klíčová slova	kompozity, polymery, rapid prototyping, 3D tisk

O studijním programu

The specialization "Additive Technology" is part of the Bachelor's degree programme "Mechanical Engineering", where students of this specialization acquire the necessary knowledge in the field of additive manufacturing. Additive Technology provides students with a deeper knowledge and understanding of the technical issues associated with 3D printing.

Profese

- Leading technologist
- Research team leader
- Rapid prototyping technology engineer
- Production manager
- Research and development specialist
- Production planner
- Teacher and lecturer
- Researcher
- Production system engineer
- Research and development
- Project manager
- Scientific researcher for process control
- Industrial engineer
- Technologist
- Instrument operator
- Research team worker

Dovednosti

- Čtení technické dokumentace
- Znalosti z oblasti technologií výroby
- Znalost metod zlepšování procesů
- Navrhování komponent
- Znalost měření povrchové teploty kontaktně i bezkontaktně

- Orientace v nákresech
- Manažerské znalosti
- Příprava výroby
- Kresba a modelování
- Postupy výroby obráběných dílů
- Metody Rapid Prototyping
- Znalost nedestruktivního testování
- Technologie CNC obrábění
- Znalost kostrukce obráběcích strojů
- Znalost technické dokumentace
- Tvorba technických zpráv
- Orientace ve schématech
- SW Solid works
- Znalost technologických procesů
- Metrologie
- Hodnocení výrobních i předvýrobních procesů

Uplatnění absolventa

The intention of the development of the study programme is to ensure and maintain the quality of all activities carried out, to continue the trend of updating the study with regard to the needs of industry and the employability of graduates in the labour market in the field of 3D printing and prototyping.

Cíle studia

Students study individual additive manufacturing technologies and their issues while being introduced to modern software to support design work. Students are able to further develop and apply the acquired experience, skills and knowledge in practice. Emphasis is also placed on the ability to use modern technology and computational methods and to effectively evaluate the outputs of engineering measurements. Graduates of this field of study can easily find their way in related engineering fields.

Odborné znalosti absolventa

Within the specialization of Additive Technologies, the student will gain knowledge of the production of models by 3D printing. Within the special subjects, students will learn to construct models with modern and attractive design, program and operate professional 3D printers for prototype and mass production of models made of metal alloys, polymers and composite materials. Students will also learn about 3D scanning and reverse engineering and practical examples and studies where 3D printing has found practical applications.

Odborné dovednosti absolventa

Within the Additive Technology specialisation, the graduate will be able to select the appropriate printing material and appropriate 3D printing technology. The graduate will be able to select the optimal position and orientation of the model for 3D printing, design technological and design modifications with respect to the production technology. The graduate will be able to program and optimize printing parameters, operate 3D printers, digitize models using a 3D scanner and perform reverse engineering. In addition, the graduate will be able to work with professional software for the construction and modification of models (CAD) and programming of print jobs.

Obecné způsobilosti absolventa

Within the Additive Technology specialization, graduates are prepared to select appropriate 3D printing technology and apply the experience, skills and knowledge gained to practical application. Given the advantages and disadvantages of additive technologies, the graduate will be able to assess whether additive technology makes sense for a given application. The graduate will be prepared to select the appropriate printing material, printing parameters and be ready to design the production process including post-processing

treatments (machining, welding, heat treatment, surface treatment, inspection and measurement, etc.). On the basis of practical experience, graduates are able to independently acquire further professional knowledge and skills. Graduates will find employment in engineering companies, the automotive and aerospace industries, healthcare and industrial design.