

# Study programme Additive technology

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<b>Faculty</b>	Faculty of Mechanical Engineering
<b>Type of study</b>	Follow-up Master
<b>Language of instruction</b>	English
<b>Code of the programme</b>	N0788A270010
<b>Title of the programme</b>	Additive technology
<b>Regular period of the study</b>	2 years
<b>Cost</b>	50,000 CZK per semester
<b>Coordinating department</b>	Department of Machining, Assembly and Engineering Metrology
<b>Coordinator</b>	doc. Ing. Marek Pagáč, Ph.D.
<b>Key words</b>	

## About study programme

Graduates of the Additive Manufacturing program will gain theoretical and practical knowledge in the field of additive manufacturing technologies, which belong to multidisciplinary issues. Students will deepen their knowledge of post-process treatments by machining, welding, and surface treatments. Students will demonstrate the acquired level by preparing and defending a diploma thesis.

## Graduate's employment

Engineer Developer  
 Technical and Operations Engineer  
 Technologist, engineer in production preparation and organisation units  
 Researcher  
 Business and technical manager  
 Designer  
 Instrument operator  
 Designer in Rapid Prototyping  
 Technologist Developer  
 Rapid prototyping technology engineer  
 Technical production preparation worker  
 Computer engineer, designer of technological equipment, tools and jigs  
 Operating engineer  
 Technical manager  
 Chief Technologist  
 Technologist  
 Production manager

## Study aims

Students are introduced to individual additive manufacturing technologies and their issues, as well as 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.

## **Graduate's knowledge**

Within the Additive Technology study program, the student will gain knowledge about 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.

## **Graduate's skills**

Within the Additive Technology study programme, the graduate is able to select the appropriate printing material and the appropriate 3D printing technology. The graduate will be able to choose the optimal position and orientation of the model for 3D printing, design technological and design modifications with regard 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.

## **Graduate's general competence**

Within the Additive Technologies study programme, graduates are prepared to choose the appropriate 3D printing technology and apply the acquired experience, skills and knowledge for practical application. Given the advantages and disadvantages of additive technologies, graduates 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 will be ready to design the production process including post-process 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, the healthcare sector and industrial design.

## **Study curriculum**

- form Full-time (en)