

**Code and title of specialty (direction):** 131 Applied Mechanics

**Title of specialization:** Tool Manufacturing

**Code and title of the field of knowledge:** 13 Mechanical Engineering

**Qualification:** Master of Applied Mechanics

with a specialization "Tool Manufacturing"

**Number of credits:** 120 ECTS credits.

**Grade of higher education:** *The second (Master) one corresponds to the seventh qualification degree of the Ukrainian National Qualifications Frame.*

**Requirements to the previous education grade:** *A person has a right to get a Master degree under the condition of a Bachelor degree. If the previous degree was received in another country, a nostrification is required.*

**Qualification requirements:** *Higher education document is given to a person who mastered the program successfully and was certified. Graduation certification is done by evaluating competence formation level. The form of certification is qualification paper defense.*

**Program learning outcomes:** Ability to conduct research, to develop methods of theoretical experimental research of the manufactured production and research facilities innovation. Ability to use a systematic reference information materials on the achievements of national and world science, technology and advanced production experience regarding the enterprise products and facilities of design developments and to prepare analytical reports on patent and other information-analytical research on companies production and design development facilities. Ability to use methods of linear programming, information technology and information available to explore the problem of the sensitivity of linear programming, models of transportation problems and their solution methods, methods of discrete programming (Branch and net method, sequential analysis and dropout options), modern methods of linear and nonlinear programming. Ability to design cutting tools of the first and second category, to perform design calculations, to build three-dimensional models, and to perform them on the basis of modeling processes that occurring when operating certain tools. Ability to effectively apply mathematical apparatus for this, to solve optimization problems.

Ability to develop algorithms for calculating the parameters of the object, using the automatized workstation of a designer, modern software packages. Ability to use algorithms, to calculate the design parameters of objects and determine their optimal ratio. During the designing process and its reasoning of direction by analyzing the object of design development, and probable reliable technology of its production, ability to identify the factors that determine the economic impact and baseline data for its calculation. Ability according to standard methods to perform a comparative analysis of basic and developed structures, to determine the economic efficiency of mechanization and automation implementation.

**Ability to get employment.** Master of 131 Applied Mechanics with a specialization "Tool Manufacturing" may take jobs of an engineer and researcher, designer-engineer, technologist-engineer, scientific consultant (in mechanical engineering), teacher of higher education institution.

**Access to further studying.** Master of 131 Applied Mechanics with a specialization "Tool Manufacturing" may continue one's studying at the postgraduate program of doctoral studies in the sphere 13 "Mechanical Engineering".

**Final Department:** Department of Machine-building and Applied Mechanics

**Institute / Faculty:** Faculty of Engineering

**Heads of educational program:** Associate Professor, Ph.D. Morneva Marina Olegivna,  
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