MECHANICS OF ADDITIVE SYNTHESIS MATERIALS
(name of the discipline)

ANNOTATION
TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION

Specialty 1-36 07 02 "Production of products based on three-dimensional technologies"
Specialty direction*_____
Specialization*_____

	Form of higher education	
	Full-time (full-time)	Correspondence
Course	**2, 3**	**3**
Semester	**4, 5**	**5, 6**
Lectures, hours	**68**	**16**
Practical (seminar) classes, hours	**50**	**18**
Laboratory classes, hours	**32**	**8**
Classroom control work (semester, hours)		**5, 2**
Credit, semester	**4**	**5**
Exam, semester	**5**	**6**
Classroom hours in the academic discipline	**150**	**44**
Independent work, hours	**138**	**244**
Total hours of academic discipline / credits	**288/8,0**	

1. Summary of the academic discipline
The discipline contains the basic concepts, laws and methods of mechanics of materials of additive synthesis (materials obtained through the use of 3d printing). On the basis of the methods of elasticity theory and experiments, the features of the structure of materials and their mechanical behavior during the shaping and operation of products are studied.

2. Learning outcomes
– know:
methods for studying and mathematically describing the structure of materials in products; methods for predicting the properties of materials in the final product according to the specified characteristics of the structure and properties of materials, taking into account the influence of technological features of production; patterns of the influence of structure on the properties of materials in products; features of the behavior of materials due to heterogeneity and anisotropy of the structure of the material;
– be able to:
to determine the characteristics of the structure and properties of materials of additive synthesis; to predict the elastic, rheological, strength and thermophysical properties of materials in final products according to the specified initial properties, parameters of the material structure, production modes; to evaluate the influence of the initial properties of materials and the final structure in the product on the process of forming products and the behavior of products in various operating conditions;
– own:
methods of forecasting the properties of materials in final products; methods of controlling the structure and operational properties of materials in products; methods of experimental determination of the properties of materials and their analysis.

3. Formed competencies

Bod-12 to know the laws and methods of mechanics of materials of additive synthesis, features of the structure and mechanical behavior of materials of additive synthesis during the shaping and operation of products

4. Rrequirements and forms of current and interim certification.
KR – control work;
TOP – test survey in a practical lesson;
ZLR – protection of laboratory work;
ZRPZ – protection of the calculation and design task;
PKU – intermediate control of academic performance;
TA – is the current certification.

Test

Score	Credited	Not credited
Scores	51-100	0-50

Exam

Assessment	10	9	8	7	6	5	4	3	2	1	0
Points	100-94	93-87	86-80	79-72	71-65	64-58	57-51	50-41	40-17	16-1	0