"FACTOR AND COMPONENT ANALYSIS"
(name of the discipline)
OUTLINE
TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION
Specialty 1-40 80 02 "System analysis, management and information processing" (by branches)
Professionalization: Information Control Systems
II level of higher education (master's degree)

	Form of training
	Full-time
Course	**1**
Semester	**1**
Lectures, hours	**26**
Practical classes, hours	**36**
Test, Semester	**1**
Classroom hours in the educational discipline	**62**
Independent work, hours	**58**
Total hours of the discipline / credit units	**120/3**

1 Summary of the content of the discipline
Formation of students' knowledge, skills and abilities, which are necessary when building modern computer vision systems.

2 Learning objectives.
As a result of the study of the academic discipline the student must
know:
-basic principles, methods and results of modern multivariate statistical methods;
-Methods of describing multivariate sampling data, basic properties of multivariate sampling characteristics;
-Methods of decreasing dimensionality of multidimensional features: method of main components, factor analysis;
-basic principles and methods of classification and discrimination of multidimensional objects.
be able to:
-produce primary processing of multivariate statistical information, find the main sampling characteristics of multivariate objects;
-identify the main components and statistically significant estimation of their number:
-Conduct factor analysis using the principal components method and the maximum likelihood method, and evaluate the significance of the constructed factor model.
-Carry out classification of factors using different rotation procedures;
-Carry out classification of objects using agglomerative, divisive and iterative methods, assess the quality of clustering;
-conduct discriminant analysis;
master:
-basic analytical techniques of multivariate and statistical analysis;
-Packages of applied programs used for multivariate statistical analysis (STATISTICA, EXCEL)
-methods of statistical evaluation of significance of models built.

3. Competencies to be formed
SK-10 Apply methods and models of factor and component analysis for statistical information processing.

4 Requirements and forms of current and intermediate attestation.
ZLR, TA, test.