



Country BULGARIA	Institution Vasil Levski National Military University	Module Products design	ECTS 5.0
Service All Languages	Minimum Qualification for Lecturers		
English, Bulgarian	<ul style="list-style-type: none"> English: Common European Framework of Reference for Languages (CEFR) Level B2 or NATO STANAG 6001 Level 2. Adequate pedagogical competences. Thorough knowledge of the topic taught. 		
Prerequisites for international participants: <ul style="list-style-type: none"> English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. The end of the 1st year of national (military) higher education. 		Goal of the Module: <ul style="list-style-type: none"> Acquiring knowledge about the basic principles, methods and requirements in the design of technical systems Acquiring knowledge about system design standards for technical systems. Gaining knowledge about the indicators of reliability of technical systems Acquiring knowledge about the methods of assessing the accuracy of engineering measurements and the possibilities for interchangeability 	

Learning outcomes	Know-ledge	<ul style="list-style-type: none"> Main categories and concepts in engineering design Basic concepts and definitions in the field of design methodology Basic standards for engineering design Basic concepts and definitions in the field of reliability of technical systems Basic concepts and definitions in the field of metrology
	Skills	<ul style="list-style-type: none"> Skills to apply the system of standards in the engineering design process; Skills to calculate the reliability of the technical systems. Skills to evaluate the possibilities for interchangeability of elements of technical systems.
	Competences	<ul style="list-style-type: none"> Capacity to apply the design methodology Capacity to apply and work with engineering design standards Capability to assess the reliability of technical systems and their impact on the engineering design stages Capacity to assess interchangeability



Verification of learning outcomes

- **Observation:** Throughout the Module students are to accomplish different practical tasks individually or in teams. The Module has one phases. During these tasks students are to be evaluated to verify their competences.
Test: At the end of the module, students must perform specific practical tasks formulated in seminars and exercises

Module Details		
Main Topic	Recommended WH	Details
Phase I		
Basic Principles of Phase I	30	<ul style="list-style-type: none"> • Knowledge about the design methodology requirements • Knowledge of design automation • Knowledge of the product life cycle • Knowledge of basic terms and definitions in standardization • Knowledge about the system of standards in engineering design • Knowledge of technical solutions documentation • Knowledge about the interchangeability of mechanical compounds • Knowledge of quality control of machine parts and mechanisms
Practical Aspects of Phase I	30	<ul style="list-style-type: none"> • Skills to apply the system of standards in the engineering design process • Skills to calculate the reliability of the technical systems • Skills to assess the interchangeability of components of technical systems
Additional hours to increase the learning outcomes		
Self-Study		<ul style="list-style-type: none"> • Improving knowledge by studying specialized literature for fundamentals of engineering design • Reflection of the topics issued.
Total	60	