

Code: 13 „Technical mechanics”

ECTScredits: 3	Number of hours per week:
Forms of assessments: Exam	2+0+2
	Types of assessment: Exam - written with oral discussion
Department, providing instruction on the discipline: Department: <i>SHIPBUILDING, SHIP POWER PLANTS</i> <i>FACULTY OF SHIPBUILDING</i>	

Lecturer: Assoc.Prof. PhD V. Chirikov

Department: *SHIPBUILDING, SHIP POWER PLANTS*

Tel. +359 8 999 05 015

e-mail: [chirikov@tu-varna.bg](mailto:chirikov@tu-varna.bg)

**Annotation:**

The discipline "Technical Mechanics" comprises three main parts: Statics, Kinematics and Dynamics. In Statics methods for reduction and conditions of equilibrium of force systems are studied, their application for solving of specific engineering problems as well. Mainly, the problems concerning determination of support reactions are solved here. In Kinematics the motion of a particle and the basic motions of a rigid body, such as translation, rotation and planar motion, are studied. Kinematics of some common planar mechanisms is considered here. The Dynamics part is devoted to the classical mechanical methods for derivation of the differential equations of motion of a particle, a rigid body and a mechanical system under the forces application.

Every student receives individual task for laboratory work that must be fulfilled and be defended at the appointed time.

To assimilate the discipline the knowledge of mainly the following mathematical sections are required: vector calculus, analytical geometry, differential and integral calculus, analysis of differential equations.

**Main issues of the syllabus content :**

- **STATICS**
- **KINEMATICS**
- **DYNAMICS**

**Content presentation:**

The training content is presented by delivering of lectures and seminar exercises. The basic theoretical knowledge is explained by means of examples, while the theory applications are demonstrated by solution of the real engineering problems. Individual tasks are devoted to obtaining the engineering skills for problems solution.