Syllabus

Basic data of the subject	
University/Faculty:	**Faculty of Engineering and Informatics**
Study program:	**Physics**
Title of the subject:	**Bachelor**
Level:	**Mandatory**
Course Status:	**I**
Year of studies:	**6**
Number of hours per week:	**6**
Value of Credits - ECTS:	**Wednesday 08:30-13:00 UShAF**
Time / location:	**MSc. Ganimete Heta**
Course lecturer:	**ganimete.heta@ushaf.net**
Contact details:	**Faculty of Engineering and Informatics**
Course Description	*Physics is an important subject for the technical sciences and it is rightly considered that technique is an application of the laws of physics. Physics will introduce students with the methods of study and with the results obtained, both of practical and experimental nature. It highlights the application and relation of the laws of physics with other technical sciences that have emerged from physics. It has the task to enable the students to do practical and research work on a variety of physical problems, to know the equipment and to evaluate the importance of the results.*
Objectives of the course:	*The purpose of this course is to equip students with knowledge of physics, which will help them apply it in their practical work.*
Learning outcomes:	*Upon completion of this module the students will be able to:* • *Apply the gained knowledge in practice, that will serve them to successfully follow professional courses during they studies* • *Use research methods, whether observational, theoretical or experimental* • *Work in groups while conducting research* • *Have good communication skills and present the graphical representation of the laws of physics.* • *Write good paper works*

Contribution to the student load (which must correspond with learning outcomes)			
Activity	**Hour**	**Day/Week**	**In total**
Lectures	2	15	30
Theoretical exercises / laboratory	2	15	30
Internship			

Contacts with teacher / consultations	2	1	2
Field exercises			
Midterm, seminars and projects.			
Homework			
Self-learning time student (at the library or at home)	4	15	60
Final preparation for the exam	6	3	27
Time spent on evaluation (tests, quiz and final exam)	2		2
Projects and presentations			
Total			**150**

Teaching methodology:	*Ectures and exercises combined with case studies and classroom discussions.*
Assessment methods:	*I. Activities during lectures and during theoretical and practical exercises* *II. First test involving half of the course/ exercises after week 7* *III. Second test after completing the course* *Note: the student who passes both tests doesn't have to undergo the final exam, only if he/ she want to have a higher grade.* *IV. Final exam has 100%. The exam consists of open theoretical questions and numerical assignments.*
Literature	
Basic Literature:	*Pal A Tipler, Kursi i Fizikës I dhe II, përpunar dhe perkthyer nga Universiteti Politeknik I Tiranës, Tiranë.* *Dr. Skender Skenderi, Dr. Ahmet Veseli, "Fizika per strudentet qe degjojne kursin nje vjeçar të Fizikes". Universiteti i Prishtinës.* *Dr. Skender Skenderi, Dr. Rashid Maliqi, "Permbledhje detyrash nga Fizika", Universiteti i Prishtines*
Additional Literature:	*Këneth Krane, "Fizika moderne"*
The ratio of theory and practice	*Theory: 80%; Practice: 20%*

Designed learning plan	
Week:	**Lectures and exercises to be held**
Week one:	**Introduction to physis** *Basic sizes* *Units* *Unit systems*
Week two:	**Understanding basic sizes**

	Length, mass, *Time, speed* *Haste, strength, strain.* *Numerical exercises for explained units*
Week three:	**Kinematics** *Movements* *Division by trajectory and velocity* *Numerical exercises for explained units*
Week four:	**Dynamics** *Understanding the force* *Newton's basic laws of classical mechanics* *Newton's universal law of gravity* *Numerical exercises for explained units*
Week five:	**Dynamics** *Gravity force – Weight* *Work, energy and power* *Law on energy conservation and its implementation* *Numerical exercises for explained units*
Week six:	**Tremors** *Harmonious transcendental motion* *Harmonious mechanical-kinematic motion of tremors* *Dynamics of harmonious tremors* *Equation of harmonic oscillations* *Numerical exercises for explained units*
Week seven:	**Test I- evaluation of the students for the units and exercises held in the first six weeks of the semester.**
Week eight:	**Tremors - Continuation** *Tremors of mathematical and physical pendulum* *Tremors of physical pendulum* *Tremors that are extinguished* *Non periodic tremors* *Numerical exercises for explained units*
Week nine:	**Mechanical waves** *Main sizes of mechanical waves* *The speed of the waves* *Equation of mechanical waves* *Connection between mechanical waves and uniform circular motion* *Mirroring and breaking the waves* *Numerical exercises for explained units*
Week ten:	**Optics** *Geometric optics* *Reflection of light* *Flat and spherical mirrors* *Equation of spherical mirrors* *Breaking the light through tiles and prisms* *Full reflection* *Fracture on spherical surface* *Thin lentils* *Numerical exercises for explained units*
Week eleven:	**Optics- Continuation** *Lentil equations* *Optical instruments* *Lens and microscope* *Breaking in prism* *Numerical exercises for explained units*
Week twelve:	**Optics- Continuation** *Wave optics* *Light interference* *Light diffraction and polarization*

	Interferential light intensity *Interference of two virtual sources* *Numerical exercises for explained units*
Week thirteen:	**Atomic Physics** *The structure of the atom* *Raterford models* *Bohr postulates* *Speed, radius and energy of electron around the nucleus* *Energy level and spectral series of the hydrogen atom* *Particle/ wave dualism of microcells* *Numerical exercises for explained units*
Week fourteen:	**The law of radioactive dismounting** *Types of spontaneous radioactive dismounting* *α, β and gamma rays* *Nuclear reactions* *Conservation laws in nuclear reactions* *The nucleus of the atom* *Nuclear energy* *Fission and fusion* *Numerical exercises for explained units*
Week fifteen:	**Test II**

Academic policies and rules of conduct
Regular attendance and engagement in the discussions during lectures and exercises is mandatory.