



JOHN WESLEY THEOLOGICAL COLLEGE
COURSE TEMATICS

Course: BASIC PHYSICS	Course type: Lecture+Seminar	Credits: 3	Course ID: KTAK106
Course responsible: Dr. István Kun	Programme type: full time	Hours/Semester 42	Assessment: End-semester exam
Course objectives: Acquiring basic knowledge of laws, principles and phenomena necessary to understand processes in the environment, as well as adjacent computations.			
Competencies to be improved: Knowledge: T1, T2, T7, T8 Ability: K2, K3 Attitude: A4 Autonomy and responsibility: F1			
Compulsory literature: Raymond A. Serway, Chris Vuille, Jerry S. Faughn: College Physics. Cengage Learning Academic Resource Center, Belmont, 2009. http://profsite.um.ac.ir/~tavallaii/Meghdadi_A/bahar/Ph1/College%20Physics.pdf			
Recommended literature: Matthew Raspanti: Physics for Beginners. http://www.thenatureofthings.info/physics_for_beginners-_PDF(copy).pdf			
Course content: Kinematic and dynamic description of movements. Newton's laws. Work, energy, power. Circular movement, rotational movement, oscillating movement, torque. Physics of fluids and gases. Pressure, surface tension. Pascal's law, Archimedes' law. Fluid and air resistance. Basic concepts and phenomena of electrostatics. Coulomb force. Ohm's law. Direct current, alternating current. Impedance. Electric polarization and induction. Transient phenomena. Magnetic phenomena. Magnetic induction and field force. Electromagnetic wave phenomena. Thermodynamics: temperature and heat. State equation of gases. Thermodynamic cycles. Thermal work, internal energy, entropy. Laws of thermodynamics. Particle physics: structure of the atom, Pauli principle. Wave-particle duality. Schrödinger equation, thermal radiation, Compton dispersion, radioactive decay.			
Course requirements: Attendance of classes, keeping up with lectures			
Grading scale: >80 %: excellent, 79-70 %: good, 69-60 %: satisfactory , 59-50 % pass			
Course Programme: WJLF ENVIRONMENTAL SCIENCE	Semester: 2022_2023_2	Lecturer: Dr. István Kun	