

**Description of Programme Educational Objectives (PEOs) Bachelor of Physics reformulated
based on the KKNI standards at Department of Physics – ITS Surabaya**

PEO	Description
PEO-1	Producing devout, ethical, and responsible individuals who are able to demonstrate leadership and cooperation in the global world
PEO-2	Producing graduates who at the beginning of their career become professionals as educators, researchers, practitioners, and entrepreneurs by using their skills and knowledge in the field of physics, which includes theoretical physics, advanced materials, instrumentation physics, optoelectronics and applied electromagnetics, geophysics, and biophysics and medical physics, to be applied in the real world of work
PEO-3	Producing professional individuals who are able to communicate in writing or orally in teams or as citizens of the world using international languages
PEO-4	Producing individuals who are able to develop themselves to always learn all the time through further studies, research, and other activities both at home country and abroad

**Description of Programme Learning Outcome (PLOs) Bachelor of Physics reformulated
based on the KKNi standards at Department of Physics – ITS Surabaya**

PLO	Description
PLO-1	able to apply logical, critical, systematic, and innovative thinking in the context of developing or implementing science and technology that takes into account the norms of religion, society, nation and state as well as scientific ethics in accordance with their field of expertise. [S]
PLO-2	able to demonstrate independent and responsible performance in the application of science and technology in the analysis of information and data compiled for problem solving in the field of physics expertise. [S]
PLO-3	able to perform management, leadership, and work together in a team in the capacity as a member or group leader and responsible for the achievement of teamwork. [KU]
PLO-4	able to communicate and apply information technology to document, store, and secure data. [KU]
PLO-5	able to develop themselves, long-life learning, and implement environmental insight and technology-based entrepreneurship. {KU}
PLO-6	Able to apply the theoretical concepts of classical physics and modern physics in depth through identification of the physical properties of a physical system. [P]
PLO-7	able to apply the principles and applications of mathematical physics, computational physics, and instrumentation in both how to operate physical instruments in general and analyse data and information from these instruments. [P]
PLO-8	able to apply the principles, characteristics, functions, and relevant and updated technological applications in the field of physics and software applications. [P]
PLO-9	able to formulate physical phenomena and problems and be able to make mathematical or physical modeling / simulations that fit the hypothesis based on the results of observations and experiments carried out. {KK}
PLO-10	able to comprehensively solve physical problems with various alternative solutions and analyse existing physical systems and predict the potential application of physical behaviour in information technology in the context of scientific development and further implementation in the field of physics expertise. {KK}
PLO-11	able to disseminate the results of problem (case) studies and physical behaviours based on standard scientific principles in oral and written communication in the form of reports or scientific works according to correct writing rules by understanding the plagiarism mechanism and publishing them at the national or international level. {KK}
PLO-12	able to adapt, collaborate, create, contribute and innovate in applying science in social life and has a global insight in his role as a citizen of the world, as well as being able to use the international language. {KK}

Note: KKNi Criteria: S = Attitude; KU = General Skills; P = Knowledge; KK = Specific Skills

Matrix Correlation of PEOs dan PLOs Bachelor of Physics at Department of Physics, ITS – Surabaya

	PEO-1	PEO-2	PEO-3	PEO-4
PLO-1	V			
PLO-2	V			
PLO-3	V			
PLO-4			V	
PLO-5				V
PLO-5		V		
PLO-6		V		
PLO-7		V		
PLO-8		V		
PLO-9		V		
PLO-10		V		
PLO-11			V	
PLO-12		V	V	V

Matrix Correlation of PLO and Course Learning Outcomes of Bachelor of Physics at Department of Physics, ITS – Surabaya

