



ASIIN General Criteria for the Accreditation of Degree Programs

Educational Objectives - Competences

The educational objectives are outlined by the explanation of the learning outcomes, i.e. knowledge, skills and competences, required by the graduates for practicing in their profession or post-graduate studies. These learning outcomes vary in extent and intensity in depending on the divergent objectives of Bachelor's and Master's programs.

The following learning outcomes (knowledge, skills or competences) are representative for a Bachelor's degree in physics:

High-quality learning outcomes Graduates

- a. They have a wide-ranging understanding of the fundamental principles of physics and their essential relation with mathematical formulation so they have acquired methods suitable for theoretical analysis.
- b. They have comprehensive knowledge of classical physics (mechanics, electrodynamics, thermo-dynamics and optics) and are aware with the fundamentals of quantum, atomic and molecular, nuclear and solid state physics.



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- c. They are familiar with important mathematical methods used in physics and can use these to solve physics problems.
 - d. They have applied their knowledge to solve physics problems in a representative manner and studied some areas in greater depth.
 - e. They are able to apply their knowledge to different fields and act responsibly in their professional activity. They are able to recognize new trends in their subject area and integrate the relevant methodology – possibly after appropriate qualification into their further work.
 - f. They are familiar with basic principles of experimentation and are in a position to assess the significance of results correctly.
 - g. They are in a position to independently classify physics-based and to some extent also problems that require a logic-based approach, and to analyze and/or solve them by using mathematical methods
 - h. They have generally also acquired an overview knowledge in selecting technical corrections.
 - i. They have gained initial experience and generic qualifications (e.g. time management, willingness to cooperate, capacity for teamwork, ability to communicate, and rules of good scientific practice) in their degree programme. They are able to develop these skills further.



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- j. They are able to continuously deepen the knowledge acquired in the Bachelor's degree programme. They are familiar with lifelong learning for this reason; they are capable of completing Master's degree program.
 - k. They are able to apply their knowledge to different fields and act responsibly in their professional activity.
 - l. They have learnt communication techniques and are familiar with the basic elements of English.
 - m. They are able to solve a simple scientific problem and to present their results orally (lecture) and in writing.
 - n. Classify, recognize, formulate and solve physical-related problems.
 - o. Can recognize, formulate, classify and solve problems in a physical context.
 - p. Implement lifelong learning strategies.
 - q. Use electronic media proficiently.



Domain		PLO		ASIIN
A- Knowledge	<i>a1</i>	Understand relevant of knowledge and theory in other related disciplines and professional fields	a	They have a wide-range understanding of the fundamental principles of physics and their essential relation with mathematical formulation so they have acquired methods suitable for theoretical analysis.
	<i>a2</i>	recognize facts, principles and concepts of classical physics (mechanics, electrodynamics, thermodynamics, vibrations, waves and optics) and are familiar with the fundamentals of quantum, atomic, nuclear, and solid state physics.	b	They have comprehensive knowledge of classical physics (mechanics, electrodynamics, thermodynamics and optics) and are aware with the fundamentals of quantum, atomic and molecular, nuclear and solid state physics.
	<i>a3</i>	describe concepts, Procedures of matching the principles and the concepts to analyze problems within specific core areas and theories.	c	They are familiar with important mathematical methods used in physics and can use these to solve physics problems.



Domain		PLO		ASIIN
B – Cognitive	b1	Apply skills when asked (discuss how to overcome educational problems)	d	They have applied their knowledge to solve physics problems in a representative manner and studied some areas in greater depth
	b2	Creative thinking (Gain mental calculating skills and trains on it)	e	They are able to apply their knowledge to different fields and act responsibly in their professional activity. They are able to recognize new trends in their subject area and integrate the relevant methodology – possibly after appropriate qualification into their further work.
	b3	Problem solving (dealing with the problems in Physics by using suitable mathematical principles).	f	They are familiar with basic principles of experimentation and are in a position to assess the significance of results correctly.
	b4	Analyze and interpret quantitative results	g	They are in a position to independently classify physics-based and to some extent also problems that require a logic-based approach, and to analyze and/or solve them by using mathematical methods.



Domain		PLO		ASIIN
	b5	Gains the skills of solving scientific problems related to industrial problems.	i	They have generally also acquired an overview knowledge in selecting technical corrections.
C- Interpersonal and responsibility	c1	show Responsibility for self-learning to be aware with recent developments in Physics	j	They have gained initial experience and generic qualifications (e.g. time management, willingness to cooperate, capacity for teamwork, ability to communicate, and rules of good scientific practice) in their degree programme. They are able to develop these skills further
	c2	Work effectively in groups and exercise leadership when appropriate	k	They are able to continuously deepen the knowledge acquired in the Bachelor's degree programme. They are familiar with lifelong learning for this reason; they are capable of completing Master's degree program
	c3	Act as professional and responsible person.	l	They are able to apply their knowledge to different fields and act responsibly in their professional activity
	c4	Recognize life-long learning is a necessity as well as a responsibility of every Graduate	m	They have learnt communication techniques and are familiar with the basic elements of English



Domain		PLO		ASIIN
D- Communication and Numerical Skills	d1	Communicate effectively in oral and written form	n	They are able to solve a simple scientific problem and to present their results orally (lecture) and in writing.
	d2	collect and classify the material for a course	o	Classify, recognize, formulate and solve physical-related problems.
	d3	Use basic physics Terminology in English	p	Can recognize, formulate, classify and solve problems in a physical context.
	d4	Acquire the skills to use the internet communicates tools.	r	Use electronic media proficiently.
E Psychomotor	e1	Use a perfect experimental tools to solve Physics problems in the Labs	q	Implement lifelong learning strategies
	e2	Employ software skills.	r	Use electronic media proficiently.