

REVIEW

of the syllabus for the course

PHY291 – “Materials Science and Advanced Materials Technology”
within the educational programme 7M05301 – “Applied and Engineering Physics”

The syllabus for the course PHY291 – “Materials Science and Advanced Materials Technology” is designed for master’s students of the educational programme 7M05301 – “Applied and Engineering Physics” and fully meets the objectives of training highly qualified specialists equipped with modern knowledge and practical skills in the field of materials science and advanced material technologies.

The content of the course covers both fundamental and applied aspects of materials science, including the classification and structure of materials, the relationship between atomic structure, defects, and properties, as well as methods for the synthesis, modification, and characterization of advanced materials. Special attention is given to nanostructured, composite, and functional materials used in electronics, sensing technologies, energy systems, and other high-tech applications.

The teaching material is presented in a logical and consistent manner, reflecting current scientific and technological advances, and provides students with a comprehensive understanding of the physico-chemical principles underlying the control of material properties. The course addresses modern synthesis, processing, and characterization techniques for thin-film, nanostructured, and heterogeneous systems.

The syllabus includes all the essential components: the aims and objectives of the course, expected learning outcomes, developed competencies, the thematic content of lectures and laboratory sessions, assessment methods and grading criteria, as well as an up-to-date list of academic and scientific literature.

The course PHY291 – “Materials Science and Advanced Materials Technology” contributes to the development of research and engineering competencies required for independent scientific work, as well as for the design and optimization of new materials with tailored properties.

The presented syllabus fully complies with the requirements of the educational programme 7M05301 – “Applied and Engineering Physics”, demonstrates a high level of scientific and methodological quality, and is recommended for approval.

A senior lecturer in School of Physics,

University Sains of Malasiya DR. BEH

KHI POAY

behkhipoay@usm.my

