Course title: Scientific Bases of Product Design	**Neptun code: GEGET410-a**

Course coordinator: Agnes Takacs, associate professor, PhD

type and number of lesson: lecture/seminar/practical lesson/consultation 2 / week or 28 / semester

method of accountability: **colloquium**/practical mark/other

curriculum location of the subject: autumn/**spring**

pre-study conditions: -

The task and purpose of the subject:

Product development is an activity that satisfies human needs, which can have technical, aesthetic, technological, ergonomic, economic and many other aspects. This multidisciplinary activity assumes that a high-quality product can be the result of the cooperation of scientists from the subfields. The aim of the subject is to study the interconnection of the individual subfields after clarifying the basic concepts.

Course description:

Characteristics of the product and technical systems. The production process of a product and its organization. Changing corporate consciousness. Advantages and problems of group work. The role of project management. Evaluation, decision methods. Tasks, motivating factors and strategies of product development. Integrated product development. Methods and tools of integrated engineering. Design and development of a competitive product.

Required literature:

1. Pahl, G. – Beitz, W. – Feldhusen, J. – Grote, K. H.: Engineering Design, third edition, Springer Verlag, London, 2007.
2. Ulrich, K. T. – Eppinger, S. D. – Yang, M. C.: Product Design and Development, seventh edition, McGraw Hill Education, New York, 2020.
3. Vajna, S.: Integrated Design Engineering, Springer, Switzerland, 2020.

Recommended literature:

1. Cross, N.: Engineering Design methods, third edition, John Wiley and Sons, Chichester, 2000.Ulrich, K. T. – Eppinger, S. D. – Yang, M. C.: Product Design and Development, seventh edition, McGraw Hill Education, New York, 2020.
2. Allen, M.: Smart Thinking, second edition, Oxford University Press, 2004.