

<b>Course title: Special purpose machines and production systems</b>	<b>Neptun code: GESGT418</b>
<b>Course coordinator: Dr. György Hegedűs, associate professor, PhD</b>	
type and number of lesson: <b>lecture</b> /seminar/practical lesson/consultation, <b>2</b> / week or semester	
method of accountability: <b>colloquium</b>	
curriculum location of the subject: <b>autumn</b>	
pre-study conditions:	
<b>The task and purpose of the subject:</b>	
Knowing the component or assembly task to be manufactured, the student should be able to independently design the special purpose machine or production system required to perform the task.	
<b>Course description:</b>	
General principles of special purpose mechanization. The relationship between mass production and machine tool structures, the basic conditions of special purpose mechanization. Modularity principle of aggregates, functional selection. Systematics of aggregate target machines and machine lines. Typical operating time allocations for single- and multi-worker machine structures. Basic principles of spatial allocation of operational assets. Interpretation of workpiece-related, machine-related cutting attack direction systems, their relationships. The purpose, implementation criteria, planning steps and results of the spatial operation tool mergers. Basic station structures. Connecting stations into a complete target machine structure. Trajectory shapes of inter-station workpiece transfer, derivation of multi-position structures. A detailed overview of the attack direction system, operation time allocation, productivity and complexity characteristics of the aggregate special purpose machine basic structures.	
<b>Required literature:</b>	
<ol style="list-style-type: none"> <li>1. Takács György, Zsiga Zoltán, Makó Ildikó, Hegedűs György: <i>Gyártóeszközök módszeres tervezése</i>, Budapest, Nemzeti Tankönyvkiadó, 2011.</li> <li>2. López de Lecalle, L. N. et al.: <i>Machine Tools for High Performance Machining</i>, Springer- Verlag, London Limited 2009</li> <li>3. C. Brecher and M. Weck: <i>Machine Tools Production Systems 2</i>, Springer Berlin, Heidelberg, 2021. doi: <a href="https://doi.org/10.1007/978-3-662-60863-0">https://doi.org/10.1007/978-3-662-60863-0</a>.</li> </ol>	
<b>Recommended literature:</b>	
<ol style="list-style-type: none"> <li>1. B. C. Gegg, C. Steve Suh, and Albert: <i>Machine Tool Vibrations and Cutting Dynamics</i>. Springer New York, NY, 2011. doi: <a href="https://doi.org/10.1007/978-1-4419-9801-9">https://doi.org/10.1007/978-1-4419-9801-9</a>.</li> </ol>	