

Course title: Design of Special Gearing	Neptun code: GEGET403-a
Course coordinator: Ferenc Sarka, associate professor, PhD	
type and number of lesson: lecture/seminar/practical lesson/consultation / week or semester: 28 (14 x 2 lectures/week)	
method of accountability: colloquium	
curriculum location of the subject: autumn	
pre-study conditions: -	
The task and purpose of the subject:	
To know the theoretical background of the operation of gears. To learn the specific features of several gearings	
Course description:	
Fundamentals of gear meshing. Coordinate transformation. Planar gearing. The Willis thesis. Envelope to families of curves. The Euler-Savary equation. Basic kinematic relations of plane gearings. Theory of spatial gearing. Envelope to families of surfaces. Kinematic method. Axis of meshing. Cycloidal gearing. Noncircular gears. Elliptical gears. The Wildhaber-Novikov gears. Spiral bevel gears having involute, cycloid and circle curves in lengthwise direction. Generated and non-generated gearing. The Formate method. Hypoid gearing. Conical gearing having involute profile	
Required literature:	
<ol style="list-style-type: none"> 1. Robert C. Juvinat: Fundamentals of Machine Component Design, John Wiley & Sons Inc. 2000, ISBN0-471-24448-1. 2. Litvin, F. L.; Fuentes, A.: Gear Geometry and Applied Theory. Cambridge University Press, Cambridge, 2004. 	
Recommended literature:	
<ol style="list-style-type: none"> 1. Drago, R. J.: Fundamentals of gear design. Butterworth - Heinemann, Oxford, 1988. 2. Litvin, F. L.: Development of Gear Technology and Theory of Gearing. NASA Reference Publication 1406, Cleveland, 1997. 3. Shtipelman, B. A.: Design and Manufacture of Hypoid Gears. John Wiley & Sons, New York, 1978. 4. Stadtfeld, H. J.: Handbook of Bevel and Hypoid Gears. Rochester Institute of Technology, Rochester, 1993 	