TITLE OF THE COURSE:	Vehicle dynamics
Course code:	IFISM024
Course group:	C
Faculty:	Agricultural Engineering
Study program:	Transport Engineering
Level:	*Master*
Semester:	*Autumn*
ECTS credits:	6
Language of instruction	English
Course lecturer/s:	Eglė Jotautienė, Algirdas Janulevičius
Short course description:	Students should have completed the deep knowledge of vehicle dynamic simulation and of vehicle behavior prediction methods; to compile dynamic models of the means of transport and their equipment in various motion movement conditions and use them to solve behavior of the means of the vehicle and performance prediction related problems.
Course content:	1. Introduction. Basic of Finite element method. 2. Derivation of constructions equations. 3. Analysis of constructions elements. 4. Two- dimensional model. 5. Derivation of element matrices. 6. Task solution of thermal conductivity and fluid mechanics. 7. General characteristics of Finite element. 8. Three-dimensional construction elements. 9. Beams. 10. Finite element of the elastic rotor. 11. Plates and shells. 12. Mechanical task solution of nonlinear deformable body. 13. Mathematical aspects of the methods.
Grading and evaluating student work in class and/or at the final exam:	The Coefficient of laboratory works and exercises is 0.3, of individual task is 0.2 and of exam is 0.5. The exam is allowed only with a positive laboratory works and exercises evaluations. Examination of the total study of course content in written form, as it is evaluated

	positively, the final assessment is calculated.
Required reading and additional study material	1. Goering C. E., Stone M. L., Smith D. W., Paul K. Development of off-road Vehicles. – ASAE, 2003. – 462 p. 2.Rao S. S. The finite element method in engineering. NYC:Elsevier Inc, 2005. - 663 p. 3. Rao S.S. Mechanical Vibrations /Fourth edition. Addison-Wesley, 2004, 1078 P. 4. http://www.solidworks.com
Additional information (if applicable)	-