

# Erasmus+ Project KA2 “MST + Culture through e-car”

Meeting – Targovishte, Bulgaria

5<sup>th</sup> – 9<sup>th</sup> October 2015

## COMPUTER LAB /ACTIVITY № 4/

### Calculation and design of a machine element of a car using application software: VISUAL STUDIO and AUTOCAD

**Task1:** Making an application by using VISUAL STUDIO so that to a given module and a number of cogs (teeth) of a gear of a car to be calculated its diameter.

The teacher in charge: Nedyalka Ruseva

Time for the activities to be implemented: one hour

№	Item	Symbol	Formula	Example	
				Pinion	Gear
1	Module	$m$		3,00	
2	Reference pressure angle	$\alpha$		20	
3	Number of teeth	$z$		12	24
<input type="button" value="CALCULATE"/>					
4	Center distance	$a$	$\frac{(z_1 + z_2)m}{2}$	54	
5	Pitch diameter	$d$	$z \cdot m$	36	72
6	Base diameter	$d_b$	$d \cdot \cos \alpha$	33,83	67,66
7	Addendum	$h_a$	1.00m	3	3
8	Tooth depth	$h$	2.25m	6,75	6,75
9	Outside diameter	$d_a$	$d + 2m$	42	78
10	Root diameter	$d_f$	$d - 2.5m$	28,5	64,5

**Task 2:** Drawing a gear of a car by using application software AUTOCAD with a help of a given draft and the calculations made in task 1.

The teacher in charge: Velichka Haralanova

Time for the activities to be implemented: two hours

