

## Tárgytematika / Course Description Mathematical Models and Methods

GKNM\_MSTA004

Tárgyfelelős neve /

Teacher's name: dr. Bácsi Ádám

Félév / Semester: 2023/24/1

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 2/2/0

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

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### OKTATÁS CÉLJA / AIM OF THE COURSE

In the course, complex engineering problems will be modelled and solved using mathematical methods. As a first step, the engineering problem is split into subtasks and the solution strategy is defined. Next, the necessary mathematical tools are presented which are practiced through easier examples. Finally, the complex problem is solved and numerically implemented (e.g. In Excel or MatLAB).

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### TANTÁRGY TARTALMA / DESCRIPTION

Week 1-2: Plot of functions with logaritharithmic scales. Parameter

Week 3 - 4 : Differential Equations - first standard second order, linear

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Week  
10-11:  
Properties  
of  
curves  
in  
two-  
dimensional  
space

Week 12: Properties of surfaces. Area of surfaces.



Week 13: Volume of the three-dimensional solid obtained by revolving the object about the s-axis.





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## **SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD**

In order to get a signature for the course, two tests must be written. The sum of the points for the two tests must reach 50% of its maximum. In the exam period, a written exam must be accomplished.

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### **KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL**

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### **AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL**

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