



1. Subject name	Digital Image Processing				
2. Subject name in Hungarian	Képfeldolgozás				
3. Code	BMEKOALD002	4. Evaluation type	exam grade	5. Credits	4
6. Weekly contact hours	2 (0) Lecture	2 (0) Practice	0 (0) Lab		
7. Curriculum	PhD Programme	8. Role	Basic course		
9. Working hours for fulfilling the requirements of the subject					120
Contact hours	56	Preparation for seminars	12	Homework	15
Reading written materials	5	Midterm preparation	12	Exam preparation	20
10. Department	Department of Material Handling and Logistics Systems				
11. Responsible lecturer	Dr. Szirányi Tamás				
12. Lecturers	Dr. Szirányi Tamás, Rózsa Zoltán				
13. Prerequisites					
14. Description of lectures					
The aim of the course is to give students the opportunity to discover novel laws in one of the following topics: computer analysis, correction and processing of two- and three-dimensional images and videos; recognition and classification of figurative shapes; mathematical methods of image processing and evaluation, manipulation.					
15. Description of practices					
During the computer practice the students are programming and solving examples about the topic of the lectures .					
16. Description of labortory practices					
17. Learning outcomes					
A. Knowledge					
<ul style="list-style-type: none">Knowing the processes and basic elements of image processing, enhancement and manipulation.Having comprehensive knowledge about the different topics of image acquisition.Knowing the computer description of images and basic properties.Knowing the basics of shape recognition.Knowing the basic properties of human vision.Knowing the principles of decision making.Having comprehensive about convolution and application areas.Knowing the methods of motion-analysis and tracking.Knowing the basic methods of texture characterization.					
B. Skills					
<ul style="list-style-type: none">Being able to apply the knowledge in tasks related to image processing, enhancement and manipulation.Application of decision making methods.Being able to apply of different shape recognition algorithms.Being able to solve tracking and motion analysis problems.Being able to solve the problems alone or in group and efficiently transfer the knowledge.Having original/innovative ideas.					
C. Attitudes Working efficiently alone and in group. Seeking for relations to other subjects. Being open to use mathematical and informatic tools.Seeking to know and learn the neccesary tools.					
D. Autonomy and Responsibility					
<ul style="list-style-type: none">Seeking to solve the problems accurately and error-free.Finding solutions alone.Taking into considereations the effects of the decisions.Applying systematic approach.					
18. Requirements, way to determine a grade (obtain a signature)					

19. Opportunity for repeat/retake and delayed completion

The [homework](#) can be corrected until the end of the week of examinations.

The oral exam can be re-take first free of charge. The second and higher re-take of the same subject has charge regulated by the university.

20. Learning materials

Online notes provided by the department; Bernd Jahne: Digital Image Processing, 5st edition, Springer, Heidelberg, 2002; W. K. Pratt: Digital Image Processing, Wiley, 2001.; Kató Zoltán, Czúni László: Számítógépes látás, Typotex, 2011

Effective date	27 November 2019	This Subject Datasheet is valid for	Inactive courses
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