

<b>Subject code</b>	<b>Credits</b>
INF6016	6

**Course title in Lithuanian**

**MULTIMEDIJOS DUOMENŲ GAVYBA**

**Course title in English**

**MULTIMEDIA DATA MINING**

**Short course annotation in Lithuanian (up to 500 characters)**

Kursas skirtas supažindinti su duomenų valdymo ir gavybos iš multimedija turinio išteklių metodais ir priemonėmis. Kurse studentai sužinos apie informacijos tvarkymo įvairaus tipo multimedija duomenų bazėse metodus, įskaitant paiešką, suspaudimą, indeksavimą, savybių atrinkimą, panašumų aptikimą ir kaip juos taikyti praktikoje panaudojant esamus programinius įrankius.

**Short course annotation in English (up to 500 characters)**

The aim of the course is to provide the student with the theoretical and practical knowledge of multimedia data mining, including big data, methods and techniques. Course content includes: image, video, audio and speech data mining. Students will learn how to accomplish different data mining tasks from multimedia data, including information search and retrieval, compression, indexing, feature selection, pattern recognition.

**Prerequisites for entering the course**

Basic knowledge of statistics and software development

**Course aim**

Provide the student with the theoretical and practical knowledge of multimedia data mining methods and techniques.

**Content**

No.	Content (topics)
1	Introduction to multimedia data mining
2	Multimedia data collection and pre-processing (data cleaning, normalization, transformation, feature construction, dimensionality reduction, working with big data)
3	Application of different data mining techniques (e.g. ANN, SMV) to multimedia
4	Image and Video mining
5	Audio and speech mining
6	Applications of multimedia mining

**Distribution of workload for students (contact and independent work hours)**

<b>Lectures</b>	<b>45 hours</b>
<b>Laboratory work</b>	<b>15 hours</b>
<b>Individual students work</b>	<b>100 hours</b>
<b>Total:</b>	<b>160 hours</b>

**Structure of cumulative score and value of its constituent parts**

Final written exam (50%), mid-term written exam (17%), and assessments of laboratory (practical) work (33%).

**Recommended reference materials**

No.	Publication year	Authors of publication and title	Publishing house	Number of copies in		
				University library	Self-study rooms	Other libraries
<i>Basic materials</i>						
	2007	M. Bishop. Pattern Recognition and Machine Learning	Springer	1	1	
	2006	J. Han, M. Kamber. Data Mining: Concepts and Techniques	Morgan Kaufmann, Elsevier	unlimited online content, through EBSCOhost	unlimited, electronic book	
	2005	D. T. Larose. Discovering knowledge in data: an introduction to data mining	John Wiley & Son	unlimited online content, through EBSCOhost	unlimited, electronic book	
	2011	I.H. Witten, E. Frank, M.A. Hall. Data Mining:	Elsevier	1		<a href="http://goo.gl/YpX0DJ">http://goo.gl/YpX0DJ</a> (free download)

		Practical Machine Learning Tools and Techniques.				
<i>Supplementary materials</i>						
1.	2007	M. F. Hornick, E. Marcade, S. Venkayala. Java Data Mining: Strategy, Standard, and Practice: a Practical Guide for Architecture, Design, and Implementation.	Morgan Kaufmann	unlimited online content, through EBSCOhost		
2.	2016	SIGKDD web page	KDD, ACM	<a href="http://www.kdd.org/">http://www.kdd.org/</a>		

**Course programme designed by**

dr. Andrius Davidsonas
------------------------