



Univerza v Mariboru  
University of Maribor



Fakulteta za  
naravoslovje in  
matematiko

### OPIS PREDMETA / SUBJECT SPECIFICATION

<b>Predmet:</b>	<b>Fizikalna multimedija</b>
<b>Subject Title:</b>	Multimedia in physics

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Fizika Physics		2	3

Univerzitetna koda predmeta / University subject code: X

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30			15		105	5

Nosilec predmeta / Lecturer: Marjan Krašna

<b>Jeziki /</b>	<b>Predavanja / Lecture:</b>	slovenščina
<b>Languages:</b>	<b>Vaje / Tutorial:</b>	slovenščina

**Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:**

Jih ni

**Prerequisites:**

none

**Vsebina:**

1. Fizikalne osnove multimedije (prikazovalniki, snemalniki, pomnilni mediji, mrežni sistemi)
2. Multimedija in hipermedia v fiziki (načini prikazovanja informacij)
3. Standardi in zapisi multimedijskih vsebin (osnove MM standardov, kodiranje in kompresije)
4. Programska orodja za izdelavo MM gradiv (MM in programski jeziki, MM avtorska orodja, MM uporabniška orodja ...)
5. Produkcija in distribucija multimedijskih vsebin
6. Multimedijska promocija fizike
7. Konferenčni sistemi (audio in video)

**Contents (Syllabus outline):**

1. Multimedia physical background (presenters, recorders, memory, multimedia grids)
2. Multimedia and hypermedia in physics (Informatin presentation)
3. Multimedia standards (introduction to multimedia standards, coding and compression)
4. Software tool for multimedia production (program languages, authoring tools, user software)
5. Production and distribution
6. Multimedia promotion of physics
7. Conference systems (audio and video)

**Temeljni študijski viri / Textbooks:**

- I. Gerlič, Sodobna informacijska tehnologija v izobraževanju, DZS, Ljubljana, 2000.
- Simon Collin, Kako deluje multimedija, Ljubljana, DZS, 1995.
- Meera M. Blattner, Multimedia interface design, Reading, Mass. etc., Addison-Wesley, 1992.
- Sarah E. Hutchinson, Computers, communications, and information, Boston etc., Irwin/McGraw-Hill, 2000.
- Janet Collins, Michael Hammond, Jerry Wellington, Teaching and learning with multimedia, London, New York: Routledge, 1997.
- Richard E. Mayer, Multimedia Learning, Cambridge University Press, 2001.
- Piet A.M. Kommers, Scott Grabinger, Joanna C. Dunlap, Hypermedia learning environments: instructional desing and integration, Lawrence Erlbaum Associates, Inc., 1996.
- Multimedia: Making It Work, Sixth Edition, McGraw-Hill Companies, Inc. 2004.

- Ralf Steinmatz, Klara Nahrstedt, Multimedia Applications, Springer-Verlag, 2004.
- Multimedia Systems, Standards, and Networks, Marcel Dekker, Inc. 2000.
- Multimedia Servers: Applications, Environments and Desing, Morgan Kaufmann Publishers, 2000.
- Multimedijske in računalniške revije, npr. Monitor, Multimedia in Education, Computers systems...
- E-gradiva na spletni strani nosilcev predmeta

**Cilji:**

Poznavanje fizikalnih osnov multimedijskih predstavitev  
 Samostojno delo pri pripravi predstavitev  
 Poznavanje kakovostnih standardov predstavitev

**Objectives:**

Physical basics of multimedia presentation  
 Independant presentation preparation  
 Quality standards for presentation assessment

**Predvideni študijski rezultati:**

Znanje in razumevanje:  
 Študent bo poznal multimedijsko aparaturno in programsko opremo. Vedel bo kako poteka produkcija multimedijskih vsebin in jasna mu bo vloga izdelave promocij in predstavitev.  
 Prenosljive/ključne spretnosti in drugi atributi:  
 Poznavanje dela z informacijsko komunikacijsko tehnologijo

**Intended learning outcomes:**

Knowledge and Understanding:  
 Student will know multimedia hardware and software. He/she will know how to produce multimedia material. He/she will also know the role of promotion and presentation.  
 Transferable/Key Skills and other attributes:  
 ICT technology appliance

**Metode poučevanja in učenja:**

Predavanja, laboratorijske vaje, samostojni izdelek (seminarska naloga)

**Learning and teaching methods:**

lectures, laboratory work, seminar work

**Načini ocenjevanja:**

Pisni izpit  
 Opravljene vaje in ustni zagovor vaj  
 Seminarska naloga

Delež (v %) /  
 Weight (in %)

**Assessment:**

Written exam  
 Done exercises and their avocation  
 Seminar work

Pisni izpit	50%	Written exam
Opravljene vaje in ustni zagovor vaj	20%	Done exercises and their avocation
Seminarska naloga	30%	Seminar work