



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Multimedijske vsebine za svetovni splet
Course title:	Web Multimedia Content

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Enovit magistrski študijski program druge stopnje Predmetni učitelj		4.	7
Five-year master's degree program Subject Teacher		4.	7

Vrsta predmeta / Course type

Obvezni / Obligatory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30		2	28		90	5

Nosilec predmeta / Lecturer:

Matjaž Debevc

Jeziki /

Predavanja / Lectures: slovenski / Slovene

Languages:

Vaje / Tutorial: slovenski / Slovene

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

Pogojev ni.

Prerequisites:

None.

Vsebina:

- Uvod: spoznavanje temeljnih konceptov za raziskovanje multimedijskih vsebin, razlike med obogateno, virtualno in mešano resničnostjo. Pregled aplikacij za njihovo uporabo v praksi.
- Priprava multimedijskih vsebin za svetovni splet: kombiniranje in prepletanje interaktivnih avdio vizualnih vsebin.
- VRML/X3D - Virtual Reality Modelling Language / eXtensible 3D Language.
- Načrtovanje in raziskovanje produkcijskih faz 360° videa v povezavi z virtualno resničnostjo.

Content (Syllabus outline):

- Introduction: Learning fundamental concepts for exploring multimedia content, the difference between augmented, virtual and mixed reality. Overview of existing applications for their usage and development.
- Preparation of multimedia content for web applications: combining and relating interactive audio-visual content.
- VRML/ X3D – Virtual Reality Modelling Language /eXtensible 3D Language.

- Fotogrametrija in ustvarjanje 3D modelov.
- Interaktivna programska okolja za vključevanje občinstva pri predstavitvah.
- Kvalitativno in kvantitativno ovrednotenje multimedijskih vsebin na spletu.

- Exploring production phases of 360° video related to virtual reality.
- Photogrammetry and creating 3D models.
- Interactive presentation software to engage the audience.
- Qualitative and quantitative evaluation of web multimedia content.

Temeljni literatura in viri / Readings:

- G. Klajnšek in B. Žalik: Standard VRML, Univerza v Mariboru, Fakulteta za elektrotehniko, računalništvo in informatiko, Maribor, 2002.
- D. Brutzman in L. Daly: X3D: Extensible 3D Graphics for Web Authors, Morgan Kaufman/Elsevier, San Francisco, 2007.
- Zachary, B. H. Virtual Reality : Advances in Research and Applications, Hauppauge, New York, 2016.
- R. Hughes, Augmented Reality : Developments, Technologies and Applications, Nova publishers, New York, 2014.
- Wohl, M. The 360° Video Handbook: A step-by step guide to creating video for virtual reality, 2017.

Cilji in kompetence:

Cilj tega predmeta je naučiti študente pripraviti in uporabiti interaktivne multimedijske vsebine na svetovnem spletu in jih ustrezno ovrednotiti.

Objectives and competences:

The objective of this course is to acquaint students with preparation and use of interactive web multimedia content and evaluate them appropriately.

Predvideni študijski rezultati:

Znanje in razumevanje:

Po zaključku tega predmeta bo študent sposoben

- oblikovati sodobne načrte interaktivnih multimedijskih vsebin na spletu,
- načrtovati, uporabiti in ovrednotiti interaktivne multimedijske navidezne svetove,
- izdelati in ovrednotiti aplikacije za virtualno, obogateno in mešano resničnost,
- s sintezo znanja izbrati ustreznejše multimedijske vsebine za svetovni splet.

Prenosljive/ključne spretnosti in drugi atributi:

- Spretnosti komuniciranja: pisno izražanje pri pisnem izpitu in individualnih esejih, ustno izražanje pri sodelovanju na vajah.
- Uporaba informacijske tehnologije: uporaba naprednih orodij za izdelavo interaktivnih multimedijskih navidezni svetov.
- Reševanje problemov: načrtovanje in izdelava samostojnega produkta v projektu.

Intended learning outcomes:

Knowledge and understanding:

On completion of this course the student will be able to

- develop actual plans for interactive web multimedia content,
- design, use and evaluate interactive web multimedia virtual environments,
- develop virtual, augmented and mixed reality applications,
- with synthesis of knowledge to select appropriate web multimedia content.

Transferable/Key skills and other attributes:

- Communication skills: manner of expression at written examination and individual essays, oral manner of expression during seminars.
- Use of information technology: use of advanced tools for development of interactive multimedia virtual worlds.
- Problem solving: design and development of an individual product in the project.

Metode poučevanja in učenja:

- predavanja,
- laboratorijske vaje,
- projekt.

Learning and teaching methods:

- lectures,
- lab work,
- project.

Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

- laboratorijske vaje,
- opravljen projekt,
- pisni izpit.

35 %
15 %
50 %

- lab work,
- completed project,
- written/ examination.

Reference nosilca / Lecturer's references:

- DEBEVC, Matjaž, WEISS, Jernej, ŠORGO, Andrej, KOŽUH, Ines. Solfeggio learning and the influence of a mobile application based on visual, auditory and tactile modalities. British journal of educational technology, ISSN 1467-8535. [Online ed.], First published: 18 April 2019, str. 1-17, ilustr., doi: 10.1111/bjet.12792.
- KOŽUH, Ines, HINTERMAIR, Manfred, DEBEVC, Matjaž. Community building among deaf and hard of hearing people by using written language on social networking sites. Computers in human behavior, ISSN 0747-5632. [Print ed.], Dec. 2016, vol. 65, str. 295-307, doi: 10.1016/j.chb.2016.08.035.
- KOŽUH, Ines, DEBEVC, Matjaž. The utilisation of social media among users with hearing loss : an analysis of Facebook communities. Universal access in the information society, ISSN 1615-5289, First Online: 18 June 2019, str. 1-15, doi: 10.1007/s10209-019-00658-x.