

<b>Study program: Information Technology</b>			
<b>Course title: DIGITAL GAMES DEVELOPMENT</b>			
<b>Teacher: Veljko V. Aleksić</b>			
<b>Course status: elective</b>			
<b>Number of ECTS credits: 6</b>			
<b>Prerequisite courses: none</b>			
<b>Course objectives</b>			
Understanding the functioning principles of digital games, game development environment characteristics and basic design concepts. Mastering the basic skills needed to develop digital games. Encouraging creative and critical use of development tools. Analysis of concepts, strategies and psycho-social aspects of different genres of digital games. Evaluation of components and characteristics of commercial digital games (computer, video and mobile).			
<b>Learning outcomes</b>			
The student is expected to functionally use game development environments (Unity and Unreal Engine) and apply basic skills and techniques to develop prototypes and working versions of a digital (computer) game. The student is able to control the movements of the player and camera; creates game objects; applies physics simulation in 2D and 3D virtual environment, including VR; creates and configures the user interface. The student understands the impact of digital games on gamers and society.			
<b>Content of the course</b>			
<i>Theoretical teaching</i>			
Concept, historical development, types and characteristics of digital games. Games functioning principles. Basic design concepts. Game development models and project organization. Project documentation. Selection, structuring and shaping digital game elements. Digital game objects. Game narrative. Game balancing. User interface and user experience. Digital games as a service. Social effects of playing digital games and their influence on player behavior.			
<i>Practical teaching</i>			
Game project creation. Game mechanics design. Prototype development. Animation of game objects. Player and camera movement. Defining stage structure and lighting. Solids and Colliders. Level design in 2D and 3D environments. Navigation, paths and obstacle avoidance. Controlling the behavior of players, allies and enemies. Game development environments. The final stage of development, creation and game testing.			
<b>Literature</b>			
[1] Hocking, J. (2015). <i>Unity in Action: Multiplatform Game Development in C# with Unity 5</i> . Manning Publications. ISBN: 978-1-61729-232-3			
[2] Bond, J. G. (2014). <i>Introduction to Game Design, Prototyping, and Development: From Concept to Playable Game with Unity and C#</i> . Addison-Wesley Professional. ISBN: 978-0-32193-316-4			
[3] Nystrom, R. (2014). <i>Game Programming Patterns</i> . Genever Benning. ISBN: 978-0-99058-290-8			
<b>Number of active teaching classes: 4</b>		<b>Theoretical teaching: 2</b>	<b>Practical teaching: 2</b>
<b>Teaching methods</b>			
Realization of lectures and exercises according to the interactive teaching model (popular lectures, discussions, demonstration, practical work, research, workshops). Activated forms of learning: verbal receptive learning, cooperative learning, practical learning, and learning by discovery.			
<b>Evaluation of knowledge (maximum number of points 100)</b>			
<b>Pre-exam obligations</b>	<b>Points</b>	<b>Final exam</b>	<b>Points</b>
Activities during teaching process	10	Final exam (written):	20
Practical teaching	30	Final exam (oral):	10
Seminary paper	30		