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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of Science and Mathematics | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | **Computer Science** | | |
| Study Module (if applicable) | | | |  | | |
| Course title | | | | Software design | | |
| Level of study | | | | ☐Bachelor ☒ Master’s ☐ Doctoral | | |
| Type of course | | | | ☐ Obligatory ☒ Elective | | |
| Semester | | | | ☒ Autumn ☐Spring | | |
| Year of study | | | | 1 | | |
| Number of ECTS allocated | | | | 7 | | |
| Name of lecturer/lecturers | | | | Rancic Svetozar | | |
| Teaching mode | | | | ☒Lectures ☒Group tutorials ☐ Individual tutorials  ☐Laboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| Introduction to OpenGL concepts and advanced algorithms and techniques of computer graphics. Students will be trained in the use of advanced algorithms and techniques in computer graphics. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| **Introduction to OpenGL. Rendering flow in OpenGL, pixel operations. Management states and drawing geometric objects. Displaying points, lines and polygons, vectors normal, fields of nodes. The analogy with the camera, transformations in connection with the review and modelling, also in connection with the projection. Stacks matrix, paints, defining regimes. Lighting, lighting sources, materials, properties and model light. Rendering, mixing colours, anti aliasing, fog effects and offset a polygon. List to run, drawing bitmap fonts and images, texture mapping, defining texture, the use of a large number of textures. Frame buffer, the test crop, alpha test. Selection and receiving of data. OpenGL shading language, the use of GLSL programming for defining the final properties of nodes or fragments. Interaction with the player using the keyboard and mouse. GLUT set of support tools.** | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| ☒Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  ☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | | | | |
| **Pre exam duties** | **Points** | | **Final exam** | | | **points** |
| **Activity during lectures** | **0** | | **Written examination** | | | **25** |
| **Practical teaching** | **25** | | **Oral examination** | | | **25** |
| **Teaching colloquia** | **25** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |