SYLLABUS

Name: ***Augmented and Virtual Reality Systems (InfAAu-IOT>SM2VRS19)***
Name in Polish:
Name in English: ***Augmented and Virtual Reality Systems***

Information on course:

Course offered by department: Faculty of Automatic Control, Electronics and Computer Science
Course for department: Silesian University of Technology

Default type of course examination report:

ZAL

Language:

English

Course homepage:

https://platforma2.polsl.pl/rau2/course/view.php?id=1047

Short description:

Subject is related to the systems of virtual and augmented reality.

Description:

ECTS: 3
Total: 75 h (45 contact hours / 30 student's own work hours)
Lecture 15h,
Laboratories 15h,
Project 15h
Students' own work: preparation for labs and project, preparation for presentations, writing reports, and implementation.

The main idea of the course is to familiarize students with the issues of virtual and augmented reality systems. First, theoretical foundations, construction and types of virtual reality devices will be presented. The student will learn programming techniques using various tools and systems such as Oculus or HTC. In the second part of the course, students will become familiar with the techniques of creating and programming devices using augmented reality. The ways of programming mobile applications using both issues will also be shown. Additionally, it is planned to organize a project concerning the practical aspects of AR/VR along with artificial intelligence methods.

Bibliography:

[1] Buchwald Paweł. Urządzenia mobilne w systemach rzeczywistości wirtualnej
[2] Mike McShaffry: Game Coding Complete
[3] Choi, SangSu, Kiwook Jung, and Sang Do Noh. Virtual reality applications in manufacturing industries: Past research, present findings, and future directions.
[4] Barrilleaux, Jon. Experiences and Observations in Applying Augmented Reality to Live Training

Learning outcomes:

1 Knowledge of virtual reality systems - K2A_W06, K2A_W09, K2A_W11, K2A_U01, K2A_U08
2 Knowledge of augmented reality systems - K2A_W06, K2A_W09, K2A_W11, K2A_U01, K2A_U08
3 Programming techniques using various tools and virtual reality systems - K2A_W06, K2A_W09, K2A_W11, K2A_U01, K2A_U08
4 Programming techniques using various augmented reality tools and systems - K2A_W06, K2A_W09, K2A_W11, K2A_U01, K2A_U08
5 Research issues related to virtual and augmented reality systems -K2A_W06, K2A_W09, K2A_W11, K2A_U01, K2A_U08

Assessment methods and assessment criteria:

1 Knowledge of virtual reality systems. Laboratory task Laboratory, project, lecture
2 Knowledge in the field of augmented reality systems. Laboratory task Laboratory, project, lecture
3 Programming techniques with the use of various tools and virtual reality systems. Laboratory task Laboratory, lecture
4 Programming techniques with the use of various augmented reality tools and systems. Laboratory task Laboratory, lecture
5 Research issues related to virtual and augmented reality systems. Laboratory task Laboratory, lecture

Syllabus is valid starting from the academic year 2025/2026 and is not going to be changed during the semester.
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Practical placement:

Not concerned

Course credits in various terms:

Informatics, full-time master degree studies 3 sem. (InfAAu-SM3)

Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	3	2020/2021-Z	