

Obuda University John von Neumann Faculty of Informatics		Biomatics and Artificial Intelligence Institute		
Name and code: <i>Introduction to Computer Integrated Surgery</i>		Credits: 3		
<i>NSTICISEND 2022/2023 year I. semester</i>				
Subject lecturers: Dr. Haidegger Tamás Péter, Nagyné Elek Renáta				
Prerequisites (with code):		-		
Weekly hours:	Lecture: 2	Seminar.: 0	Lab. hours: 2	Consultation: 0
Way of assessment:	Midterm, exam, optional project work			
Course description:				
<i>Goal:</i> The course's goal is to understand the main concepts of Computer Integrated Surgery and modern medicine.				
<i>Course description:</i> This course introduces the most important approaches in modern medicine, such as Robot-Assisted Surgery, medical imaging, image guided surgery, surgical skill assessment, neural network-based medical image processing, etc.				

Lecture schedule	
<i>Education week</i>	<i>Topic</i>
1.	Introduction to Computer Integrated Surgery
2.	Lab tour at the Antal Bejczy Center for Intelligent Robotics
3.	Basics of robotics
4.	Da Vinci Surgical System
5.	Medical imaging
6.	Image guided surgery I.
7.	Image guided surgery II. + project works
8.	Midterm
9.	Surgical skill assessment
10.	AR/VR
11.	Neural Networks
12.	Da Vinci competitors
13.	Business considerations in modern medicine + project works
14.	Pre-exam
Midterm requirements	
<i>Education week</i>	<i>Topic</i>
8.	Lectures 1-7

Final grade calculation methods

Midterm – 20%, Exam – 80%

Achieved result	Grade
85%-100%	excellent (5)
70%-84<%	good (4)
60%-69<%	average (3)
51%-59<%	satisfactory (2)
0%-50<%	failed (1)

Type of exam

Written

Type of replacement

Project work

References

Mandatory:

Recommended:

D'Ettorre, Claudia, et al. "Accelerating Surgical Robotics Research: Reviewing 10 Years of Research with the dVRK." *arXiv preprint arXiv:2104.09869* (2021).