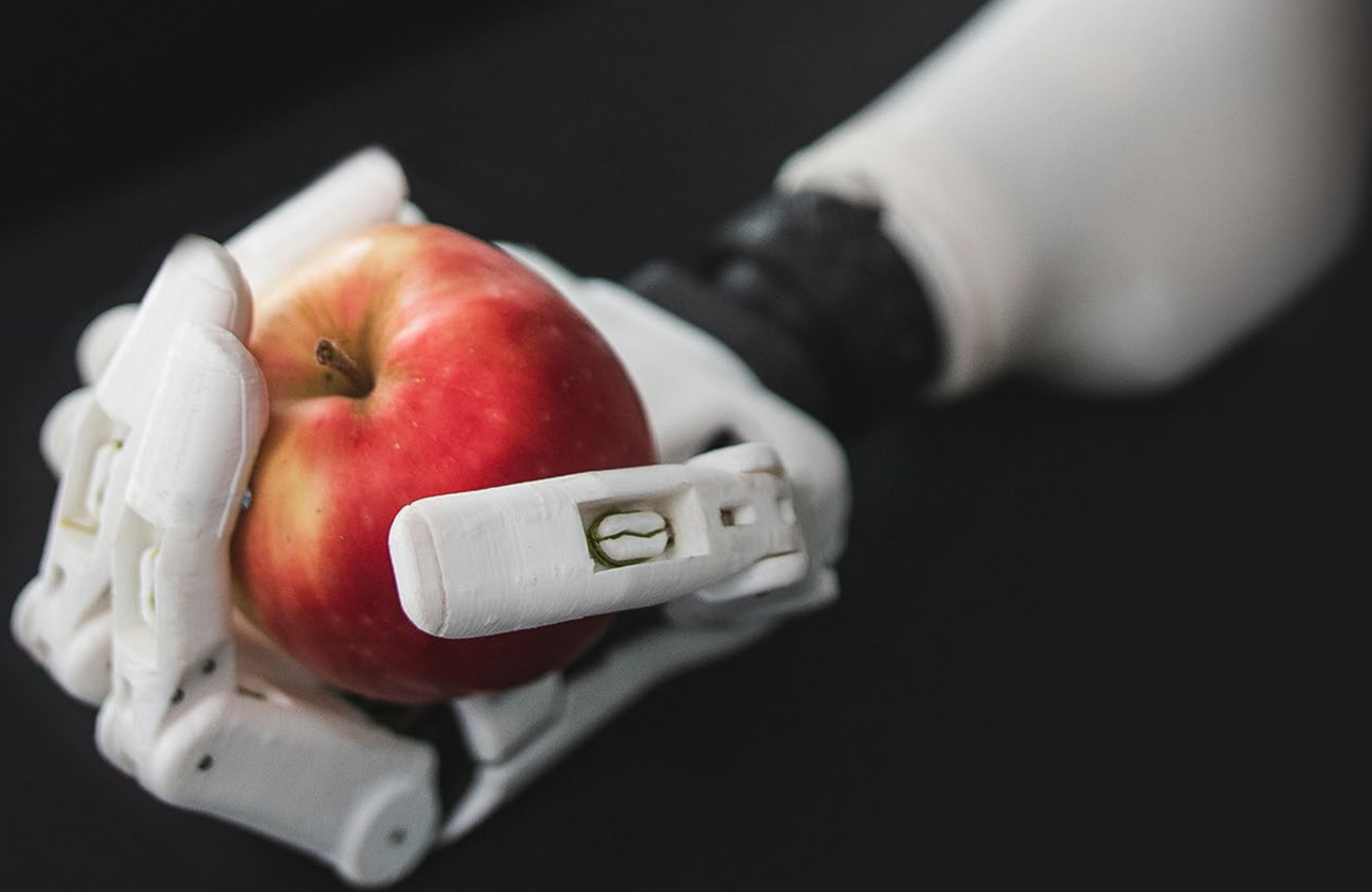




PÉCSI TUDOMÁNYEGYETEM
UNIVERSITY OF PÉCS



BIOMEDICAL ENGINEERING MSc PROGRAMME



BIOMEDICAL
ENGINEERING
PROGRAMME



PÉCS is the fifth largest city of Hungary, located on the slopes of the Mecsek mountains in the south-west of the country.

It is a **beautiful** place to study. Not only because it is simultaneously a **friendly** village and a very **active** city, in which you never have to be bored.

You can be sure **you will find everything** that a student could wish. The town is famous for its museums, galleries, the festivals and cultural events it hosts.

The downtown of Pécs is a **unique mixture** of the relics of Early Christianity, the arrival of the Hungarians, the Turkish reign and the achievements of modern architecture and arts.





PÉCS, HUNGARY



UNIVERSITY OF PÉCS
MEDICAL SCHOOL



University of Pécs
Faculty of Engineering and
Information Technology



BIOMEDICAL
ENGINEERING
PROGRAMME



PÉCSI TUDOMÁNYEGYETEM
UNIVERSITY OF PÉCS

The University of Pécs with its 20 000 students, with more than 4 500 international students, with 1 400 lecturers and researchers, with its 10 faculties is one of the largest higher education institutions in Hungary and the centre of knowledge within the Transdanubian region. Its roots date back to 1367.

*"the first university
of Hungary"*



UNIVERSITY OF PÉCS



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MEDICAL SCHOOL



University of Pécs
Faculty of Engineering and
Information Technology



BIOMEDICAL
ENGINEERING
PROGRAMME



▶ **650**
years of foundation

More than

▶ **30 years'**
experience in
international
education

More than

▶ **70**
full and several
short training
program in English

More than

▶ **114**
sending countries

Ranked among

▶ **TOP 3**
Hungarian
universities

UP belongs to
the leading

▶ **3,6%**
of international higher
education institutions
worldwide





In 2019, the [Faculty of Engineering and Information Technology](#) at the [University of Pécs](#) worked in close cooperation with the [Medical School](#) to launch a special type of training specifically targeting the frontier of engineering and medical sciences.



Interdisciplinary knowledge has become extremely valuable worldwide.



The concept was based on several years of successful brainstorming and collaboration, which led to the creation of two exciting ventures in Pécs, Hungary: the [3D Printing and Visualization Centre](#) offering unique technological capabilities across Hungary and the [Centre for Biomedical Engineering and Innovation](#), featuring a network of engineering and medical research teams working together to develop new processes and achieve scientific results



As a result of joint research and development, there has been a claim to train professionals with engineering and health-medical knowledge. The established Biomedical Engineer Program (BEP) **professionals who can confidently apply technical and IT solutions to solve medical problems and create technologies that improve people's quality of life**, combining the best of both disciplines.



PÉCSI TUDOMÁNYEGYETEM
UNIVERSITY OF PÉCS

The aim of the new MSc programme is to train professionals with interdisciplinary theoretical and practical knowledge related to engineering, informatics, medicine, medical science, health sciences and natural sciences.



MSc PROGRAMME



UNIVERSITY OF PÉCS
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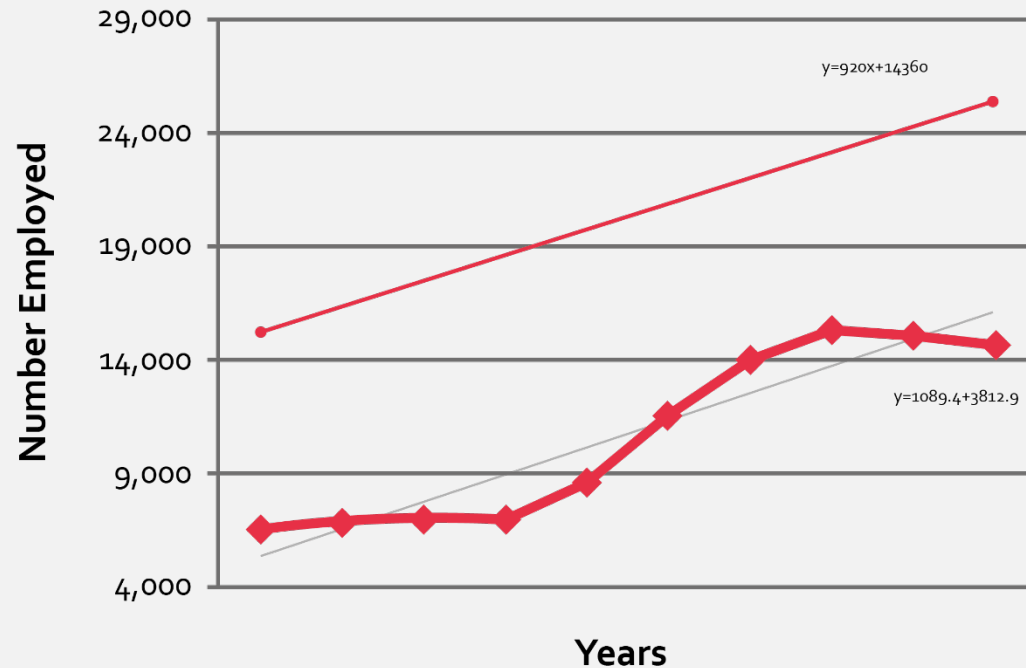
Medical engineering can be applied to an extremely wide range of practical and theoretical fields including independent research, development and project works by groups of health and technical professionals (clinical, diagnostic and curative) and engineers. After practice, these groups will in turn be capable of leading other groups independently.





BME Employment Past 10 Years and Projected Future 10 years

◆ Total Employment 2000-2009 ◆ Projected Employment 2010-2020



Biomedical Engineering
Occupational Outlook:
How were the past 10 years?

[https://bmeofthefuture.wordpress.com/;](https://bmeofthefuture.wordpress.com/)

2013.02.21.



The structure of the biomedical engineering MSc programme

- There are three free directions



Neurorehabilitation + HMI



Neuroimaging;



Tissue Engineering + 3D bioprinting

- A total of 120 credits
- The program is practical and project-based, allowing students to master what they have learned alongside 'real' projects in addition to theory.





Professional Knowledge
(16 credits must be selected
from the courses)

Medical Imaging physics, tomographic algorithms,
MRI physics

Radiophysics / Radiobiology

Biomedical Material Science

Manufacturing technologies in medicine

Practical Anthropometrical Modelling

Finite Element Modelling

CT / MR / PET / LINAC Systems

Data transfer, postprocessing, HIS systems

Medical Devices

Design- and technical documentation

Artificial Intelligence

Neurorehabilitation

Tissue engineering and bioprinting

Genetic modification and GMO



Courses for project work
(4 semesters)

Research Methology

Project work

Thesis 1.

Thesis 2.





Basics of Natural Science (24 credits)

Mathematics (compulsory courses with a medical background)

Physics (compulsory courses with a medical background)

Functional Anatomy (compulsory courses with an engineering or natural science background)

Physiology (compulsory courses with an engineering or natural science background)

Biophysics

Biomechanics

Molecular cell biology and biotechnology



Economic and Human Knowledge (10 credits)

Ethical issues in medical research

Clinical research

Quality Assurance and Device Certification



Professional Basics (27 credits)

Basics of Anthropometry

Biomedical Measurement Theory

Medical image processing

Medical Cybernetics

System theory

Human - Machine Interface

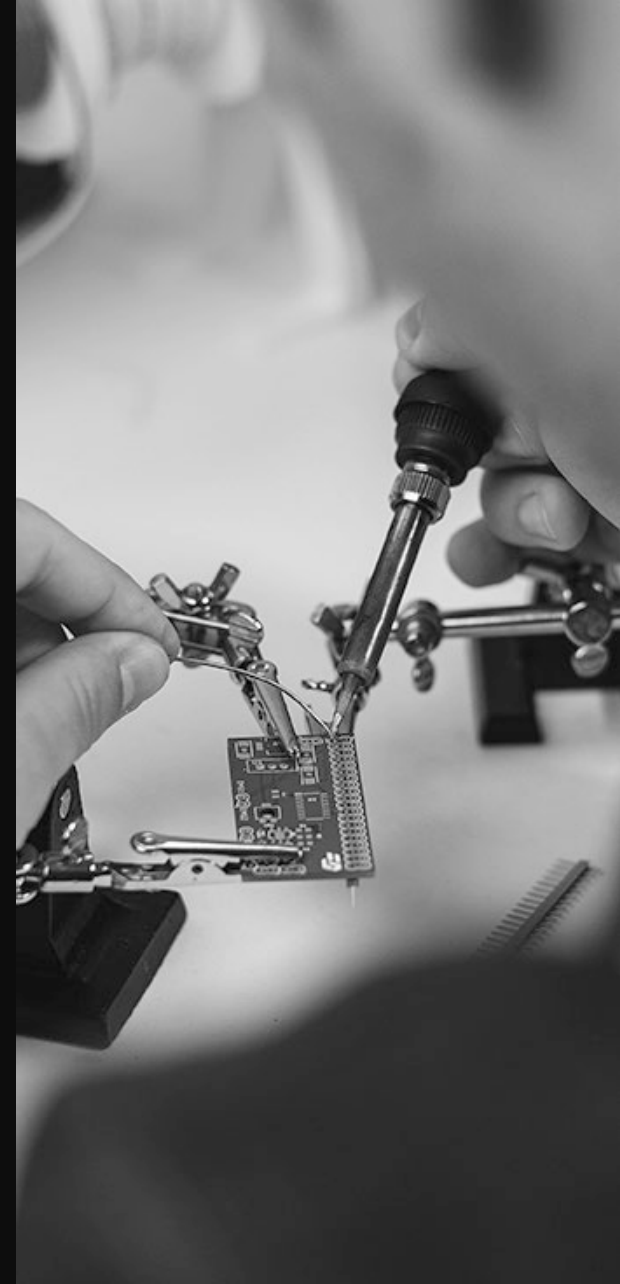
Engineering programming



Optional Courses (can also be selected from the Professional Knowledge courses)

Course 1.

Course 2.





Project work + diploma (3+4+6+24 credits)

Goal: join students in innovative projects
as soon as possible (first or second semester)



RESEARCH METHODOLOGY (first semester)



PROJECT WORK (second semester)



DIPLOMA WORK 1 (third semester)



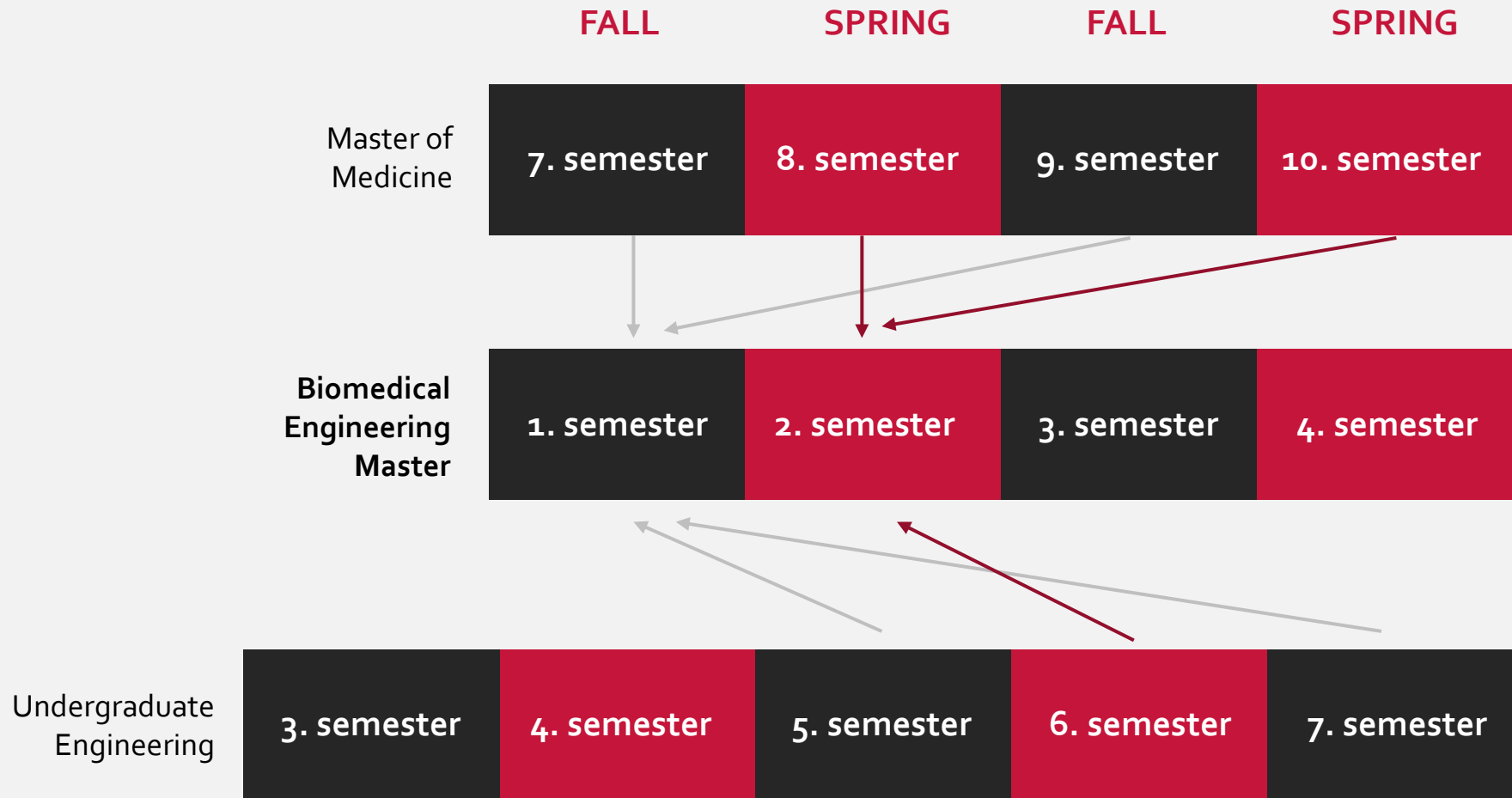
DIPLOMA WORK 2 (fourth semester)



The planned structure of the timetable for one group:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00						8 classes	
16:00					4 classes		
19:00	3-4 classes	3-4 classes	3-4 classes	3-4 classes			





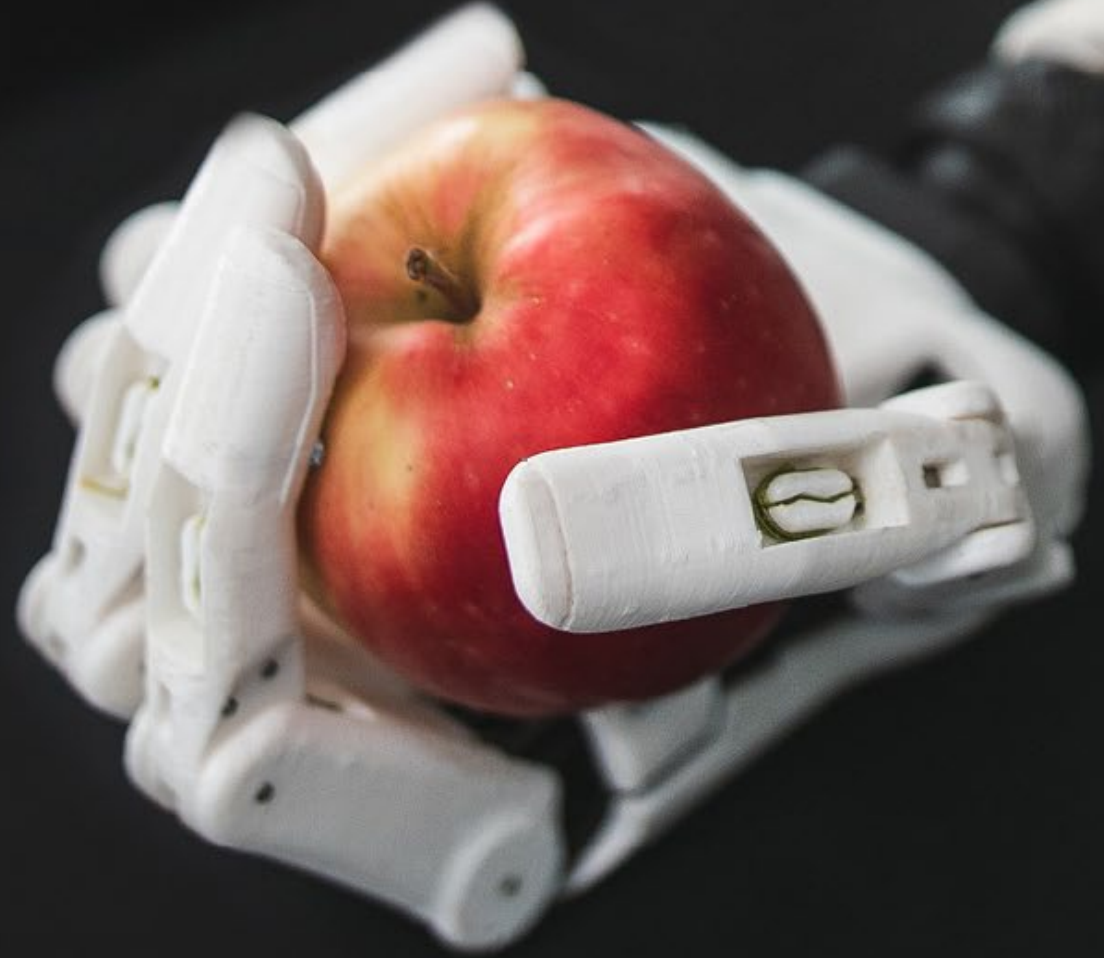


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THE PROFESSION OF THE FUTURE

APPLY NOW



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