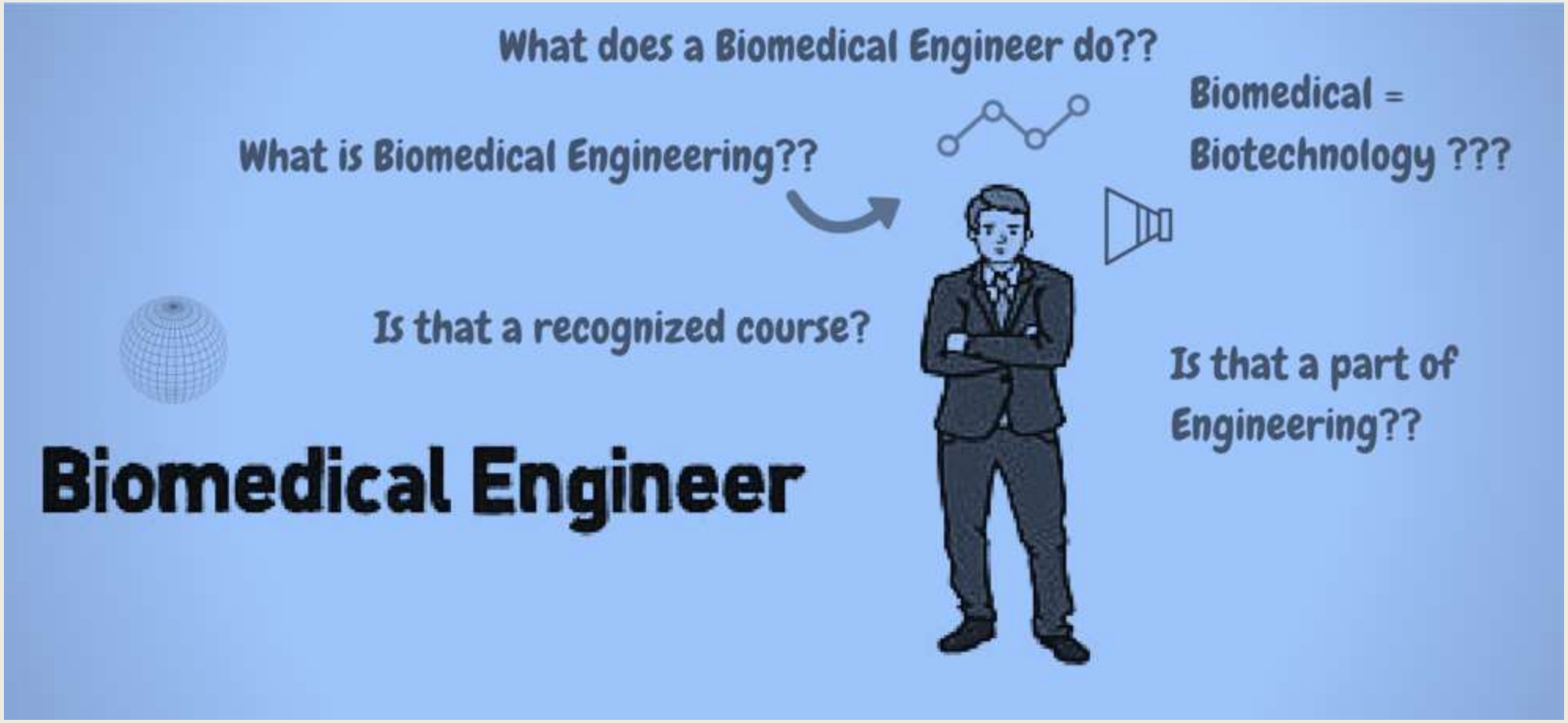
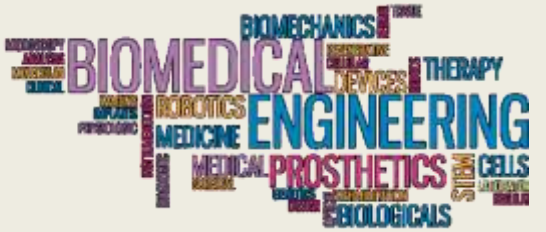
HEALTHCARE ENGINEERING AND MANAGEMENT (HEM)

Based on Credit Hours System (CHS)

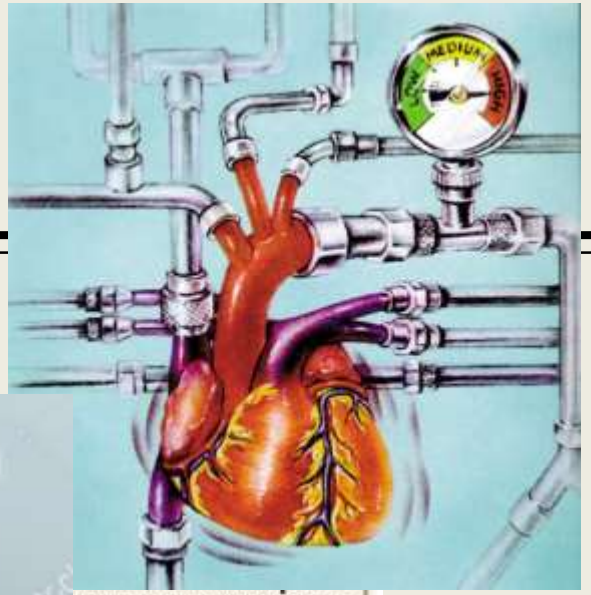
Biomedical Engineering?!!!

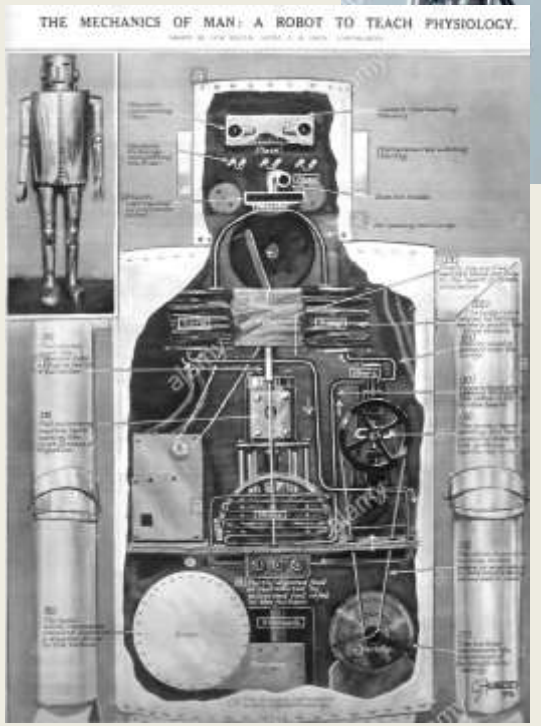


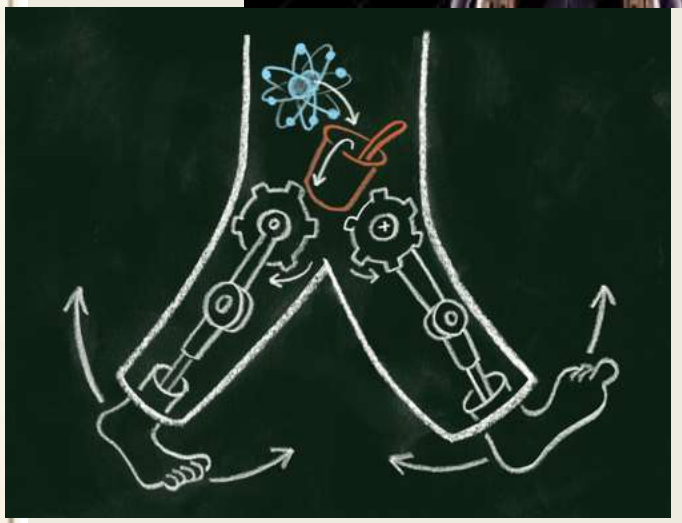
Biomedical Engineering



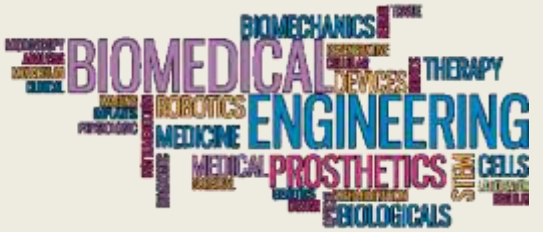
- Human body as an Engine





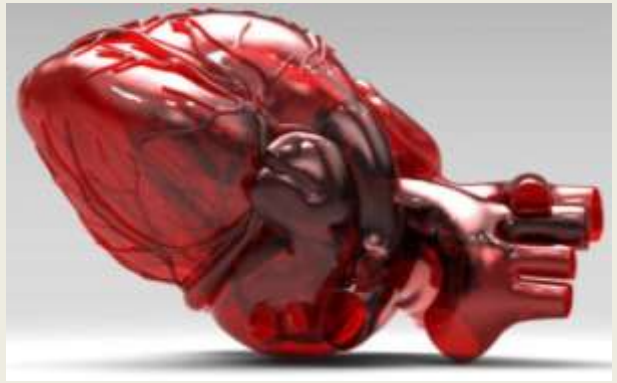


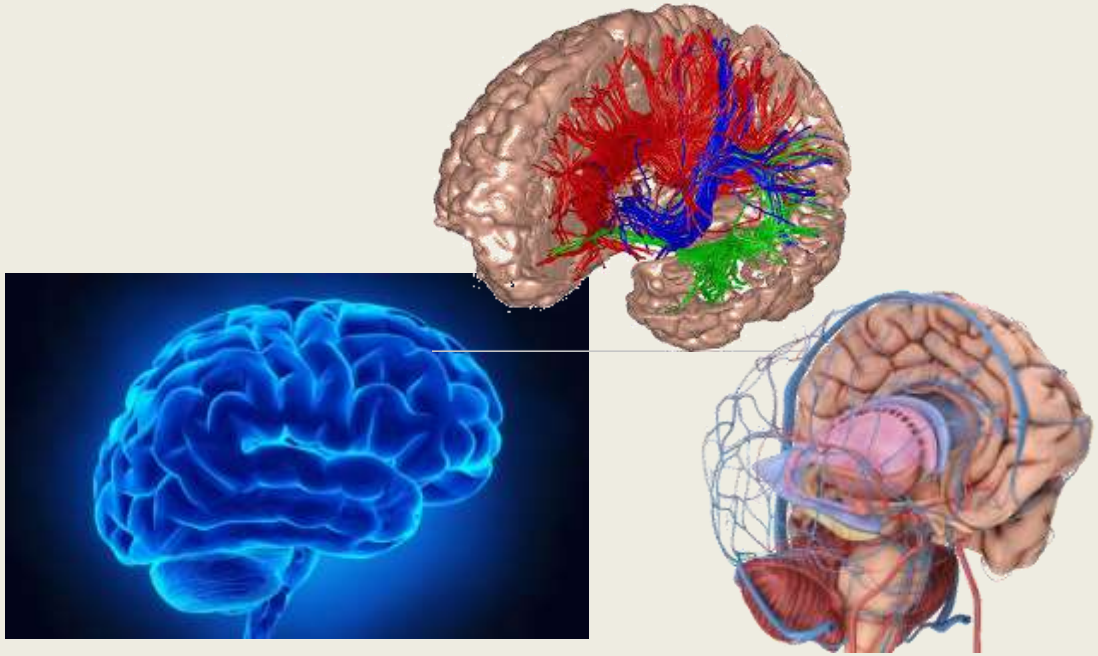
Biomedical Engineering Aims

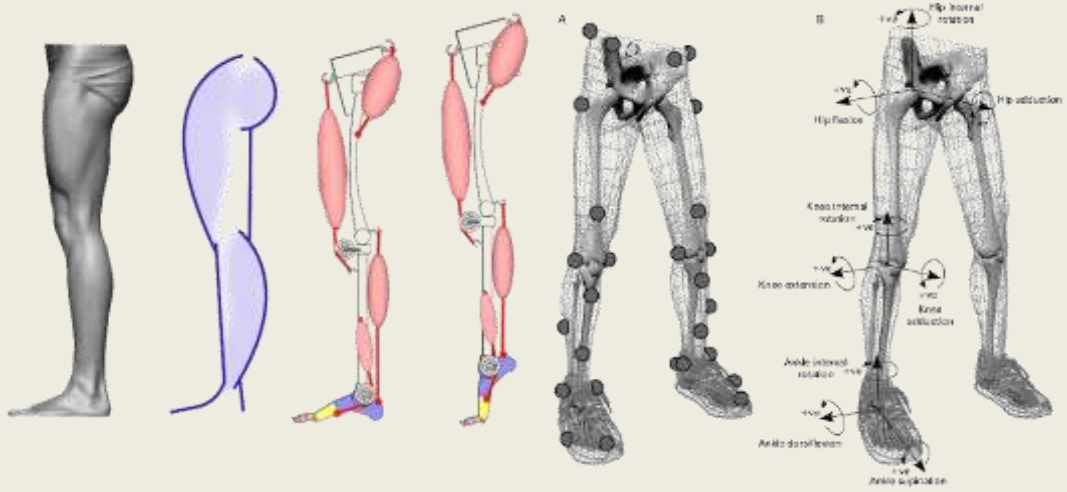


- It's all about **human body** as an **engine** for the aim of:

Understanding



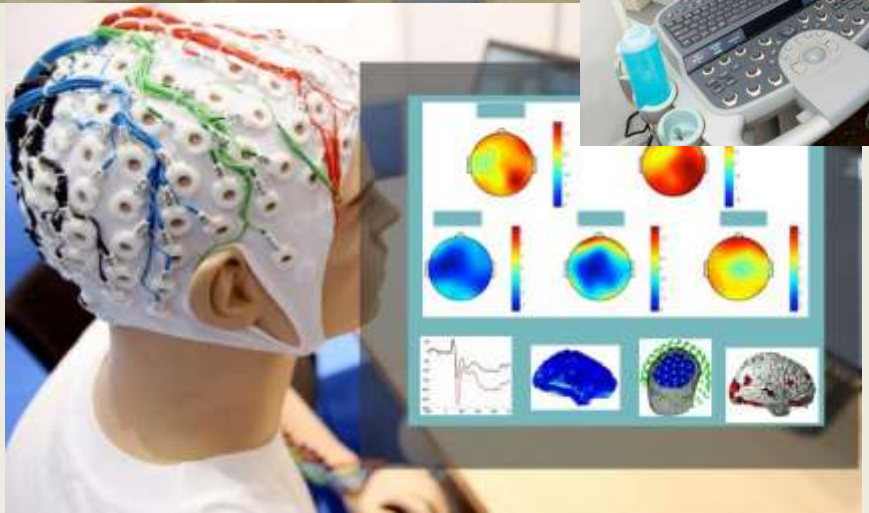




Biomedical Engineering Aims

- It's all about **human body** as an **engine** for the aim of:

Diagnosis

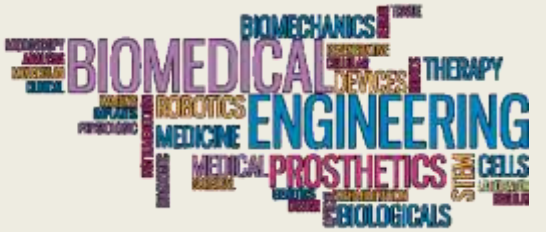


Biomedical Engineering Aims

- It's all about **human body** as an **engine** for the aim of:

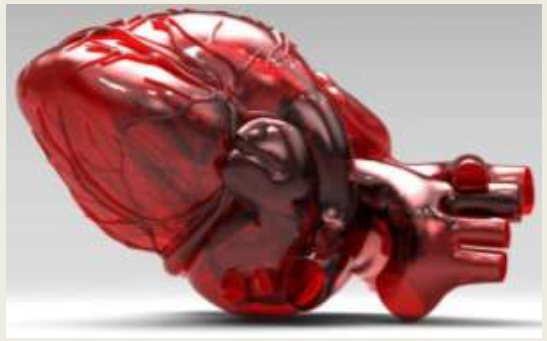
Helping with solutions

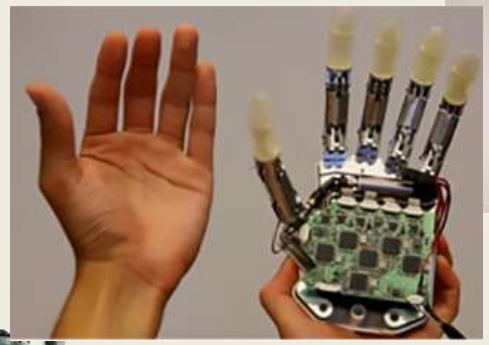
Biomedical Engineering Aims

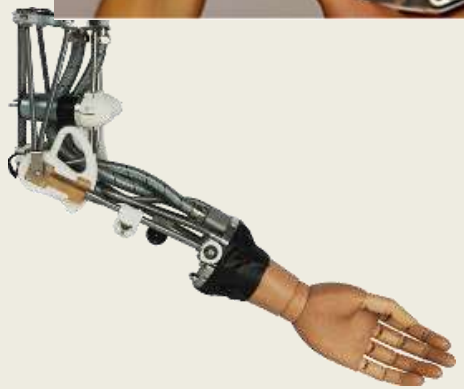


- It's all about **human body** as an **engine** for the aim of:

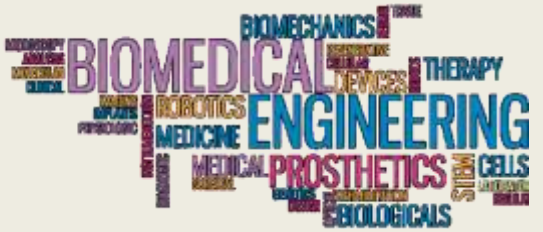
Providing replacements (imitate…imitate)







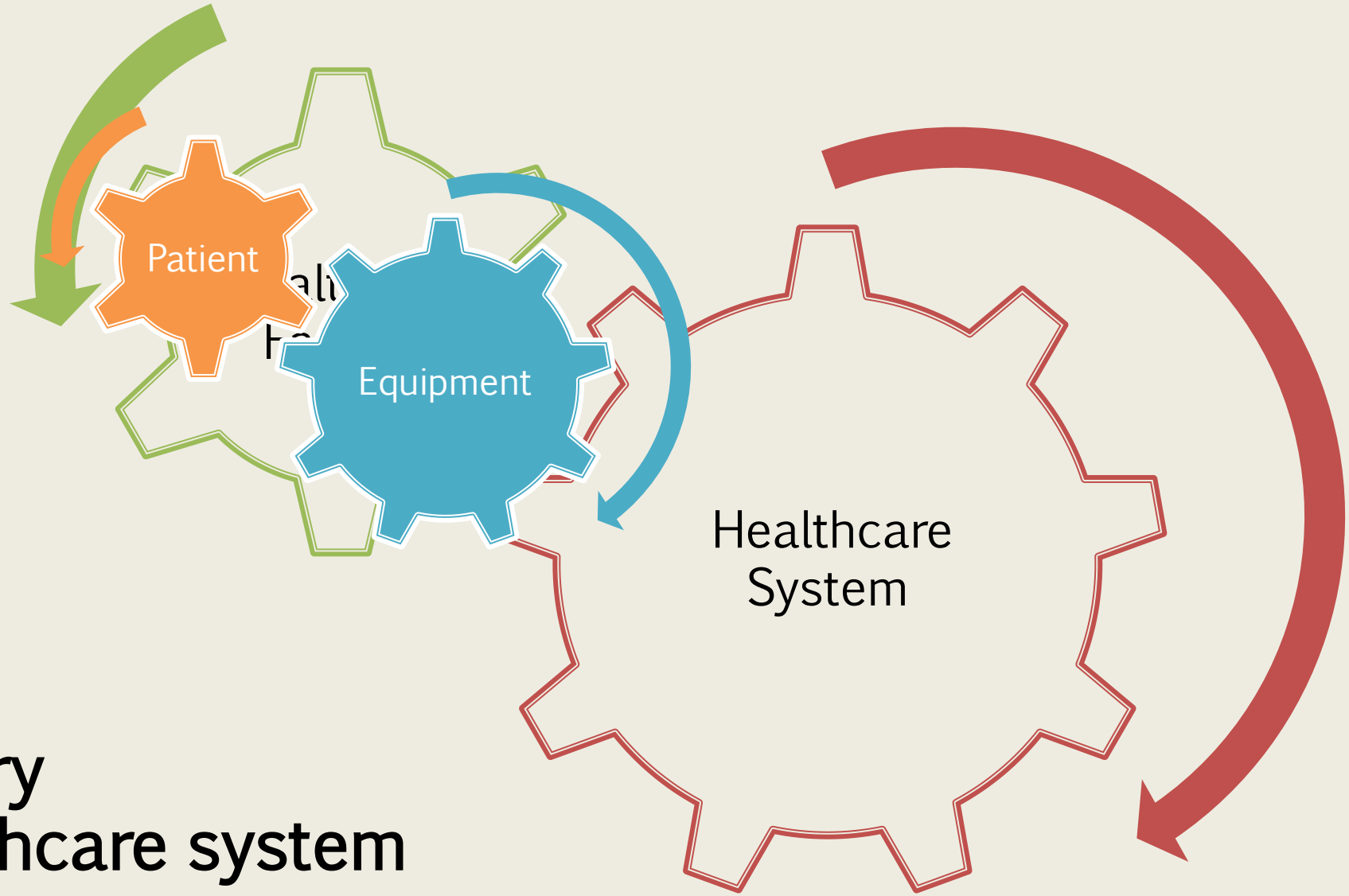
Biomedical Engineering



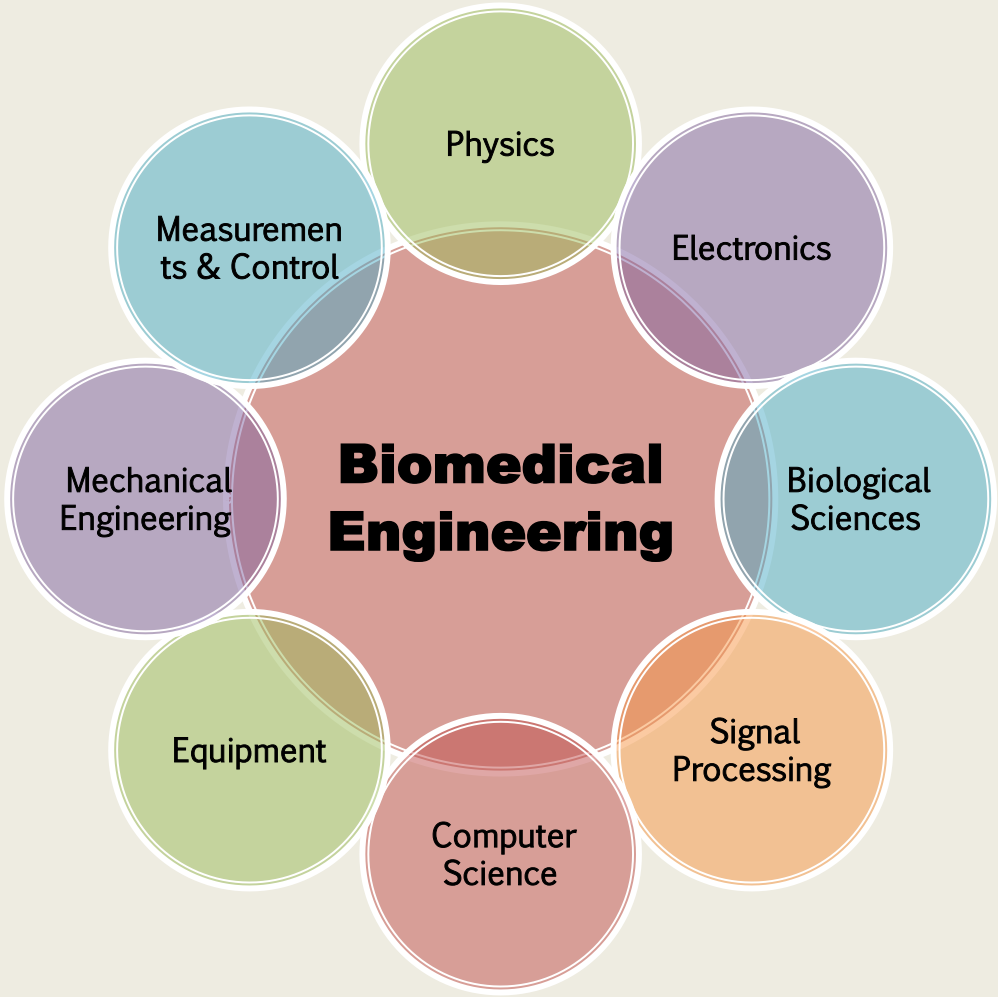
- It's all about **human body** as an **engine** for the aim of:

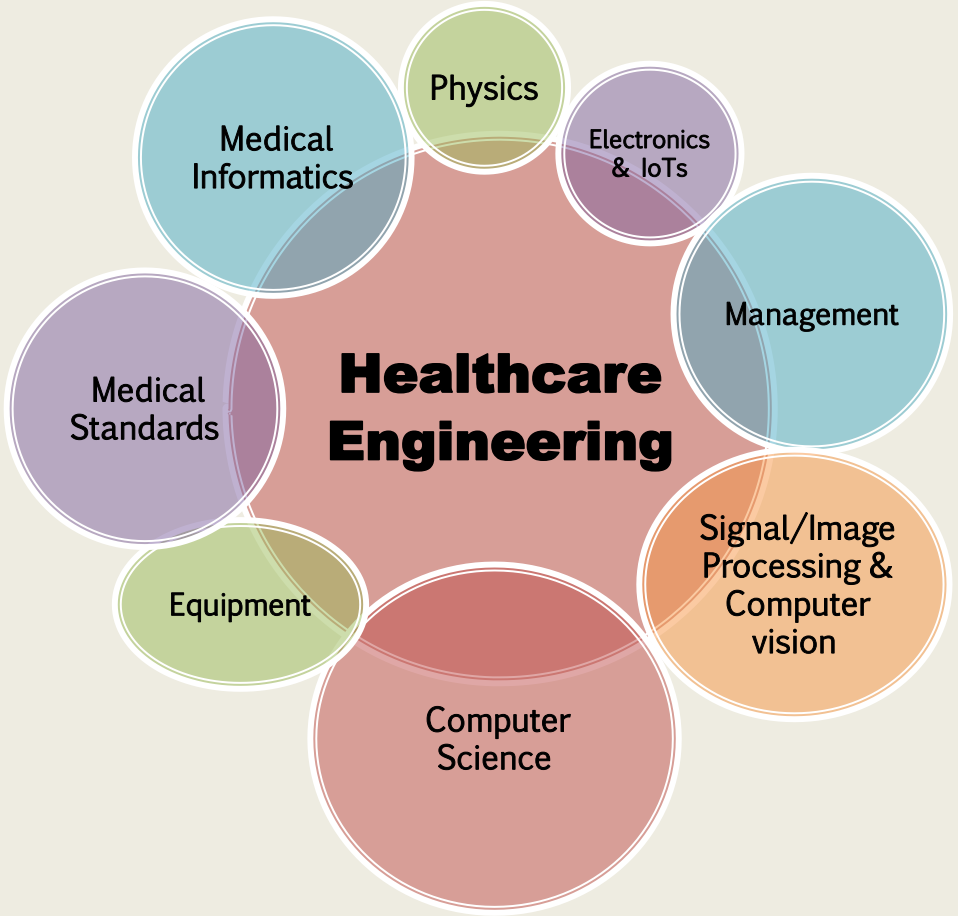
Proper workshop

Biomedical Eng. & Healthcare Eng.



Focus on machinery
Focus on the healthcare system



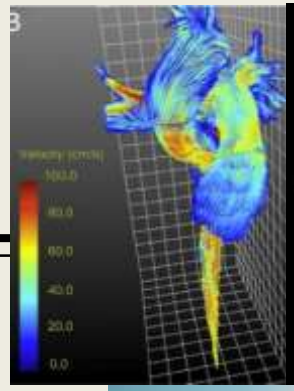


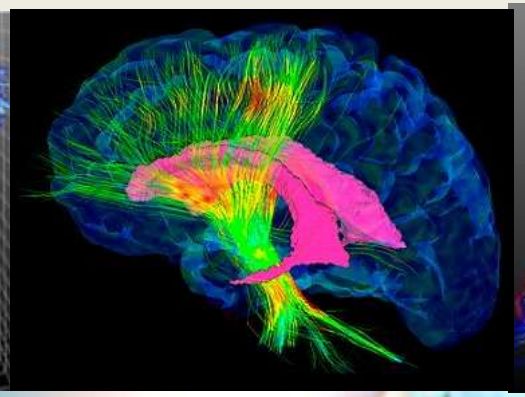
Medical Equipment

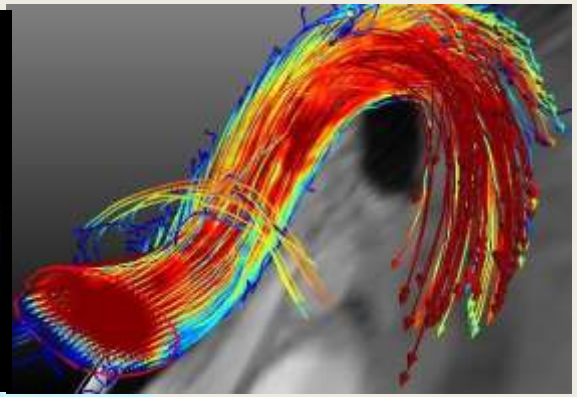
Healthcare Facilities & Healthcare System

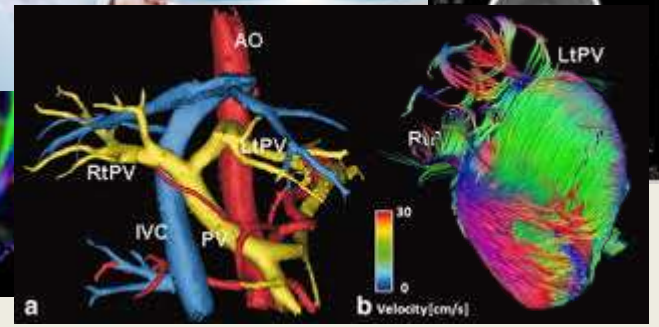
HEM graduates

Jobs









National Market

- National development
- Healthcare system reform plan
  - Clinical engineering,
  - Healthcare facilities designing & planning,
  - Medical standards,
  - Medical software,
  - Healthcare management,
  - Healthcare information systems.

أبرز 15 معلومة عن مشروع قانون التأمين الصحى الشامل بعد موافقة الحكومة عليه

الجمعة، 27 أكتوبر 2017 02:00 ص

الدكتور أحمد عماد الدين وزير الصحة

6- ثلاث هيئات معنية بتطبيق القانون، وهى هيئة الرعاية الصحية، وتكون معنية بمنافذ تقديم الخدمة، وهيئة الجودة والاعتماد، وتمنح المستشفيات الاعتماد وفق معايير الجودة المعمول بها، وهيئة التأمين الصحى، وتتولى إدارة وتمويل التأمين الصحى.

MYOCARDIAL SOLUTIONS
Quantifying Wall Motion

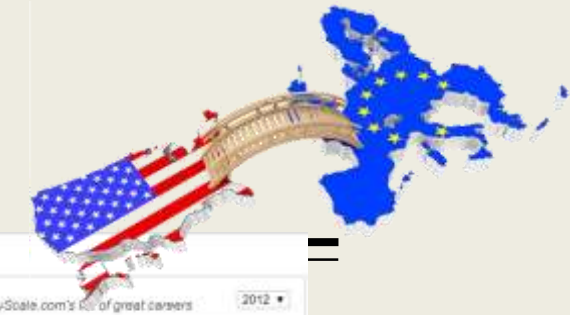
Zebras Technology

Medstreaming

diagnosoft

Dileny Smart Solutions Tech

Regional & International Market



14 مليار دولار حجم مشاريع الرعاية الصحية بالسعودية

السبت 21 جمادى الأولى 1435هـ - 22 مارس 2014م

Gulf countries offering international investment opportunities in health care

N.P. Krishna Kumar

Dubai

A shortage of hospitals, clinics and related infrastructure, along with an increasing population and official push to promote medical tourism, makes the health care sector in the Gulf region a promising area for investment.

The increasing emphasis on health care as part of economic plans is exemplified in the UAE Vision 2021 and Saudi Vision 2030. Both countries are promoting public-private partnerships to finance health-care projects.

"Dubai needs 1,000 hospital beds in the next five years just to keep pace with the growing population growth, which translates to seven hospitals, at around 150 beds per hospital," said Craig Plumb, head of research at Jones Lang LaSalle MENA.

Promising sector. Official opening of King College Hospital London's new Medical Centre in Jumeirah.

REUTERS

TVM Capital plans $200 mln investment in UAE healthcare portfolio

CNN Money

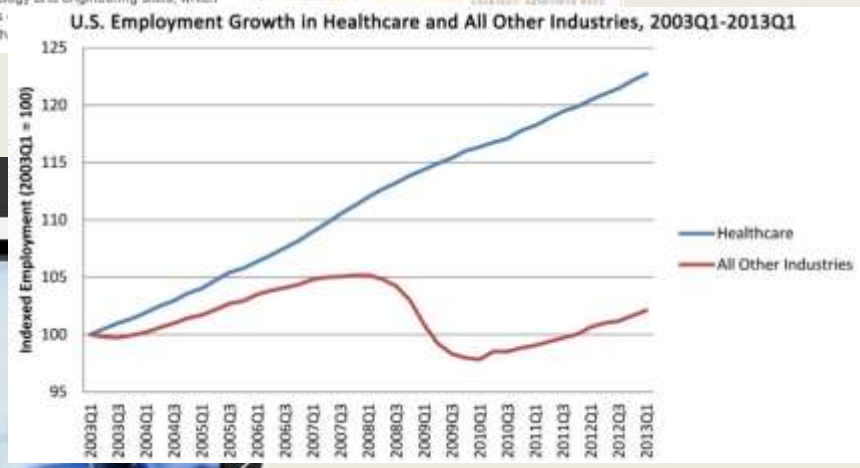
BEST JOBS IN AMERICA CNNMoney/PayScale.com's list of great careers 2012

1. Biomedical Engineer

BACK NEXT

Median pay: $79,500
Top pay: $124,000
10-year job growth: 61.7%
Total jobs*: 15,700

What they do all day? Science fiction is a little less fictional in the day-to-day work of biomedical engineers, who design prosthetic limbs and artificial organs or regenerate tissue. They also create drug formulations, develop pharmaceuticals or collect and analyze biological data, among other work. In this field lies the intersection of biology and engineering skills, which helps



Forbes

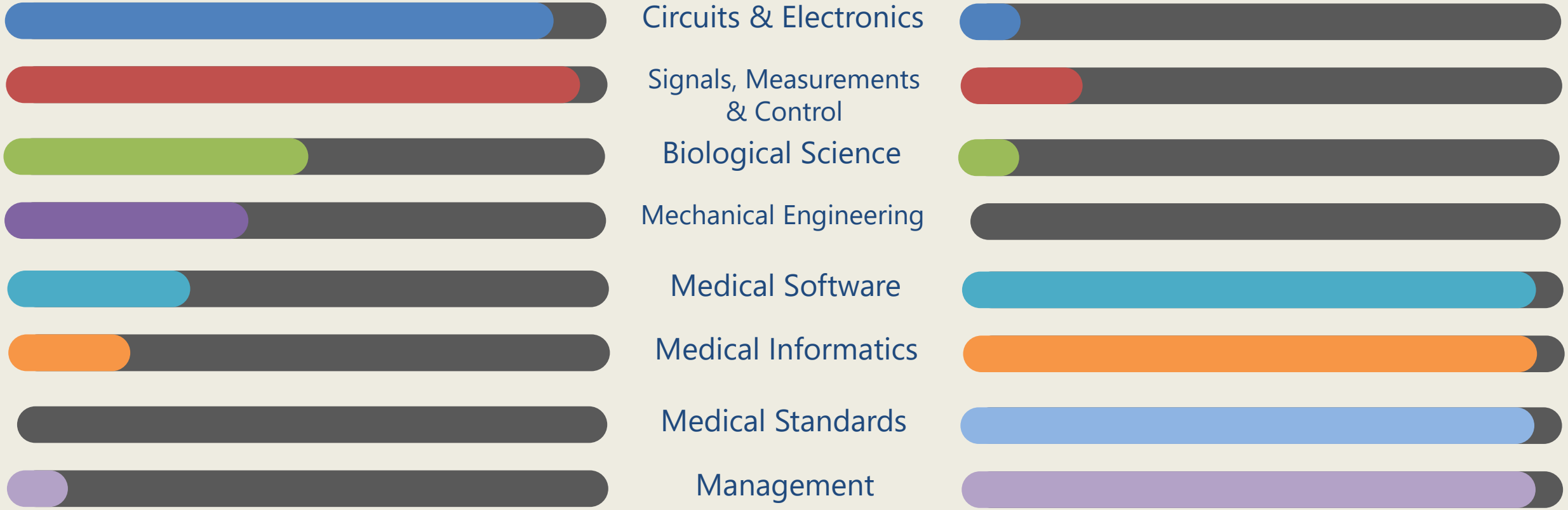
15 Most Valuable College Majors

No. 1: Biomedical Engineering
Starting Median Pay: $53,800
Mid-Career Median Pay: $97,800

Photo: Phillip Spears/Getty Images

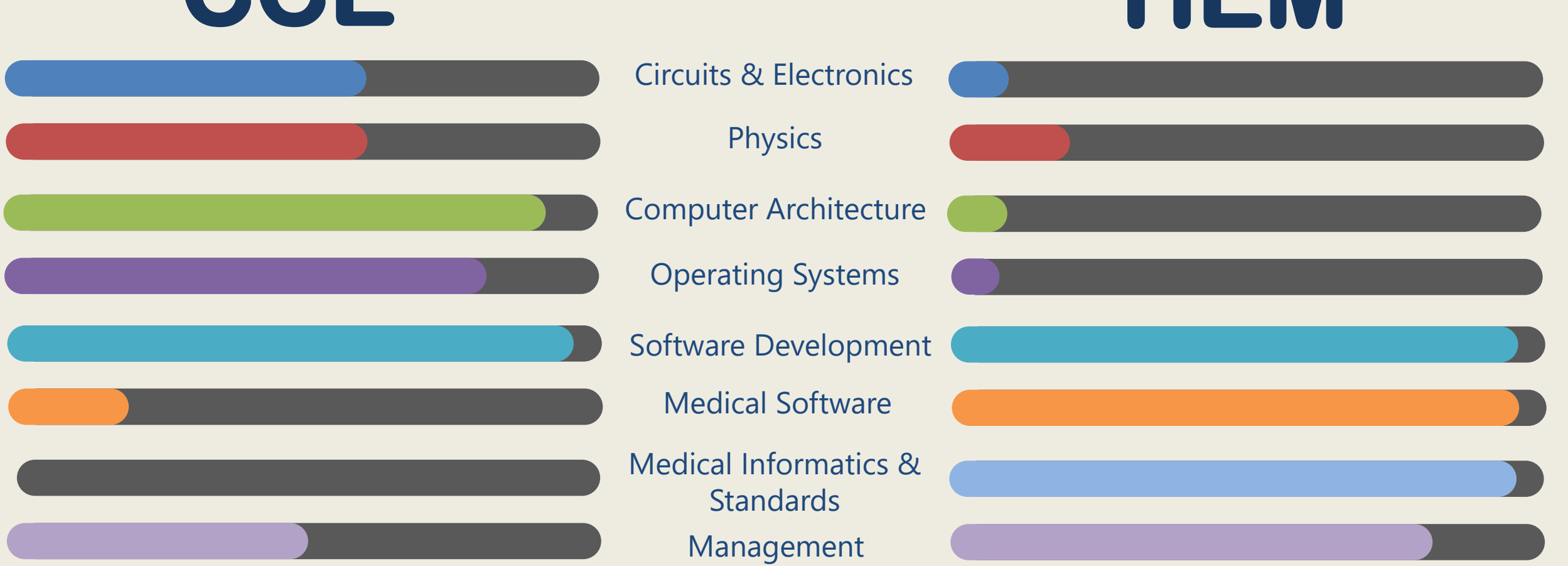
SBME

HEM

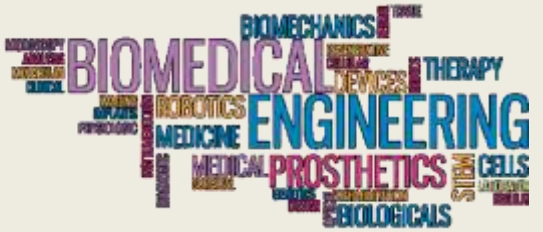

Circuits & Electronics
Signals, Measurements & Control
Biological Science
Mechanical Engineering
Medical Software
Medical Informatics
Medical Standards
Management

CCE

HEM

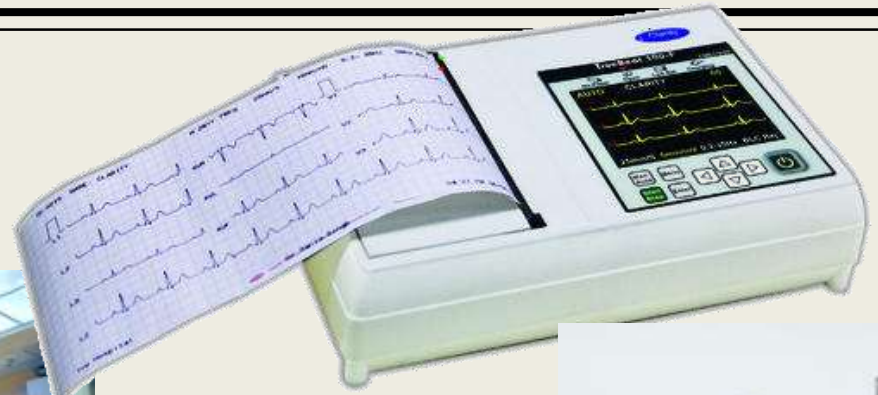

Circuits & Electronics
Physics
Computer Architecture
Operating Systems
Software Development
Medical Software
Medical Informatics & Standards
Management

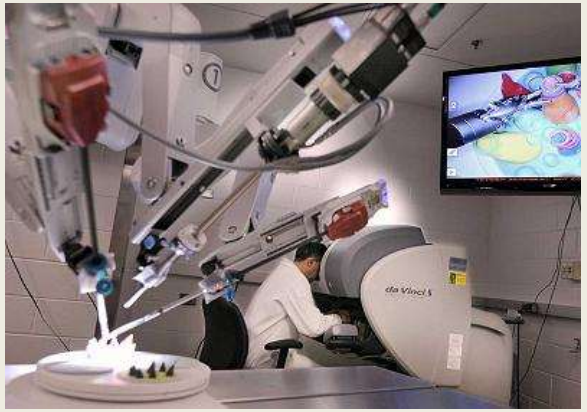
BIOMEDICAL ENGINEERING AREAS



Machineries

- Bioinstrumentation
- Medical imaging
- Surgical instruments
- Medical devices
- Medical robotics





Measurement Devices

- Monitoring

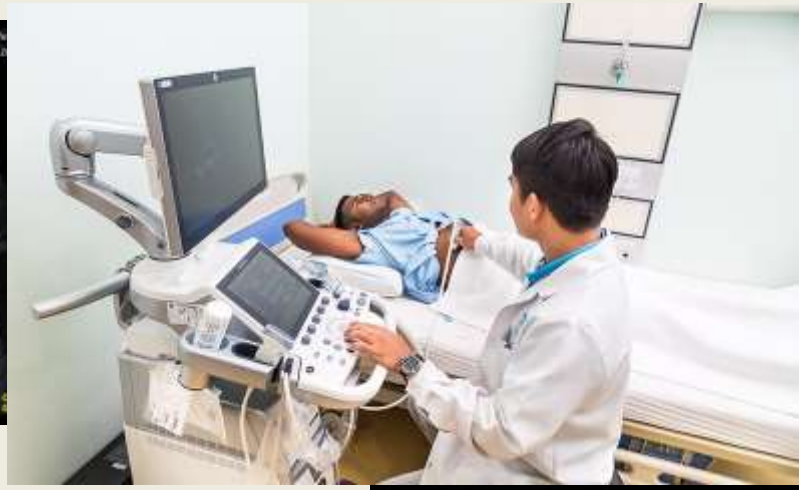
- Basic tools

- Labs

Radiological Devices

- X-Ray

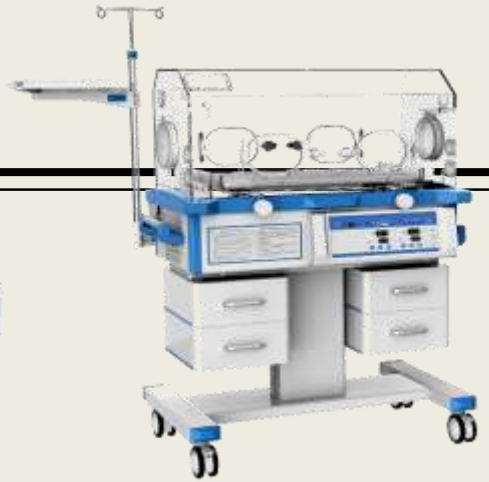
- Ultrasound



- Magnetic Resonance Imaging

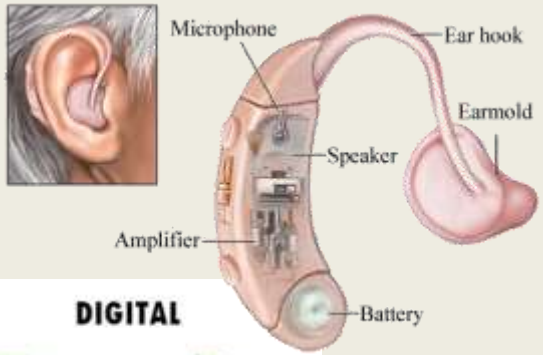
Assisting Devices

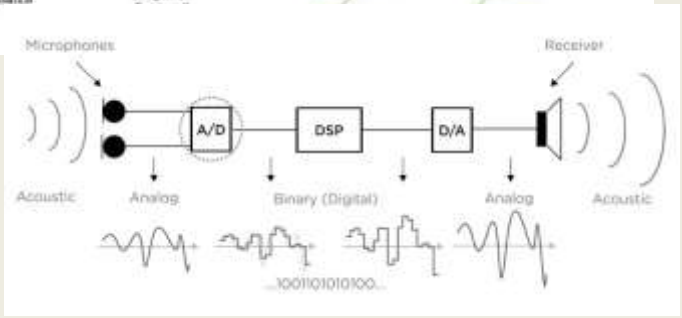
- Incubators



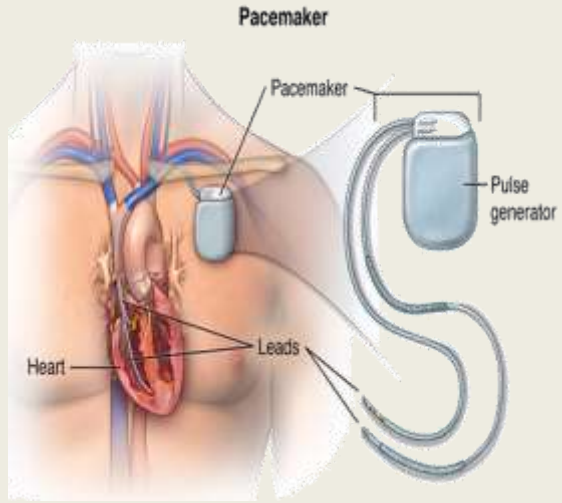
- Ventilators

Hearing-aid



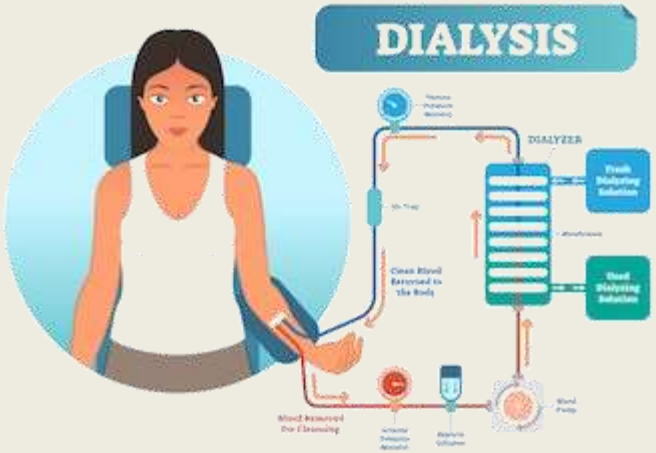


Pacemaker & ICD

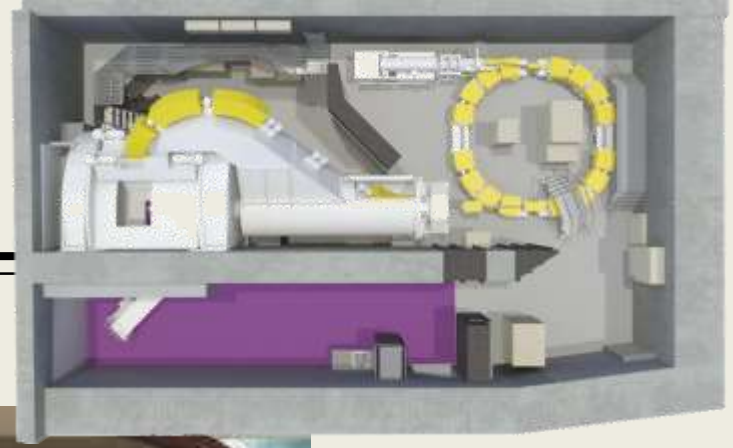


Treatment Devices

- Dialysis

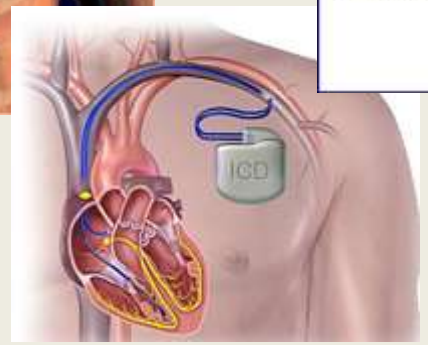


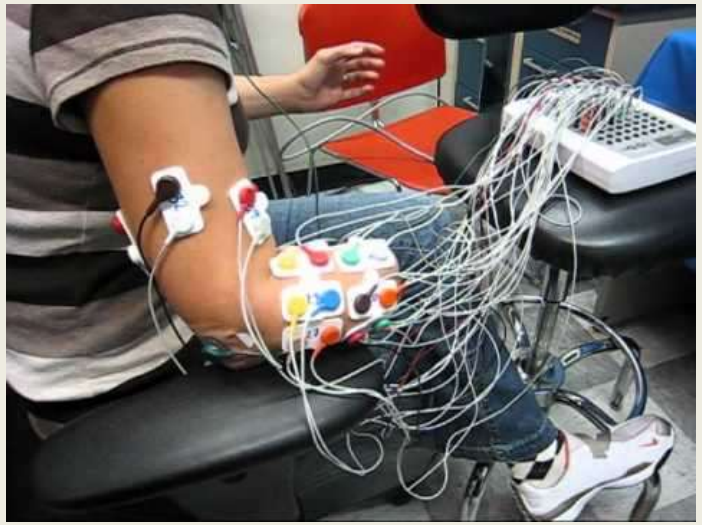
- Radio-Therapy



Signal Processing

- ECG (heart waves)
- EEG (brain waves)
- EMG (muscles waves)





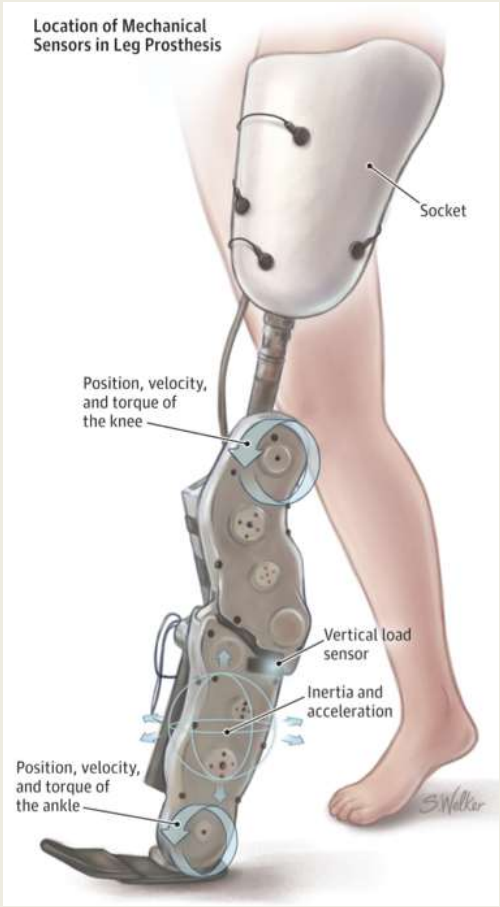
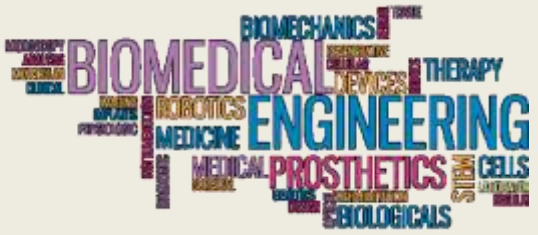
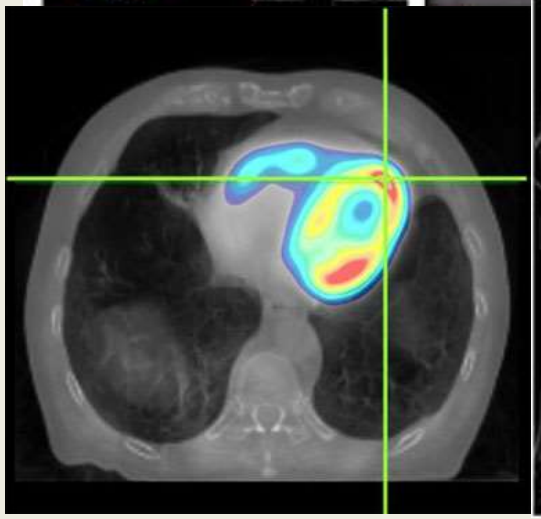
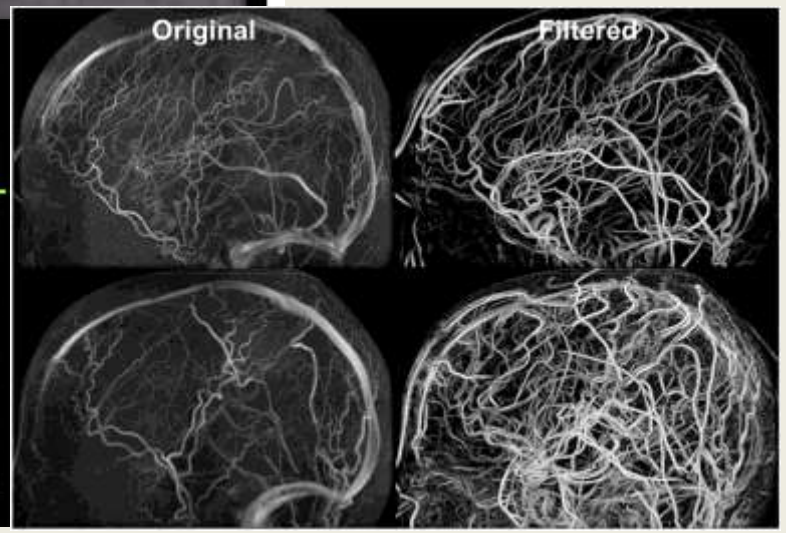


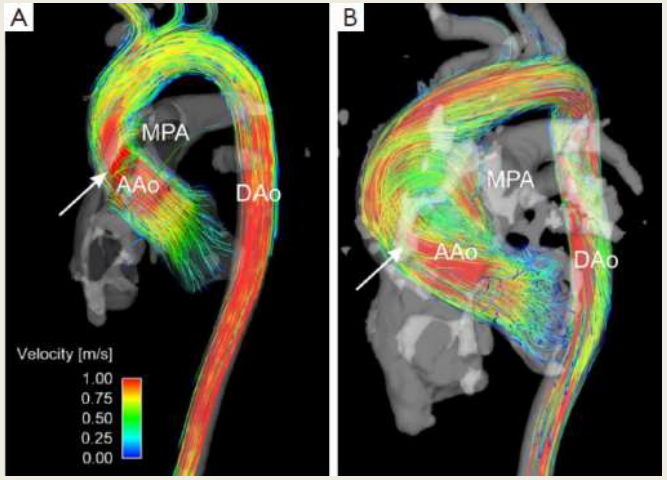
Image Processing & Computer Vision

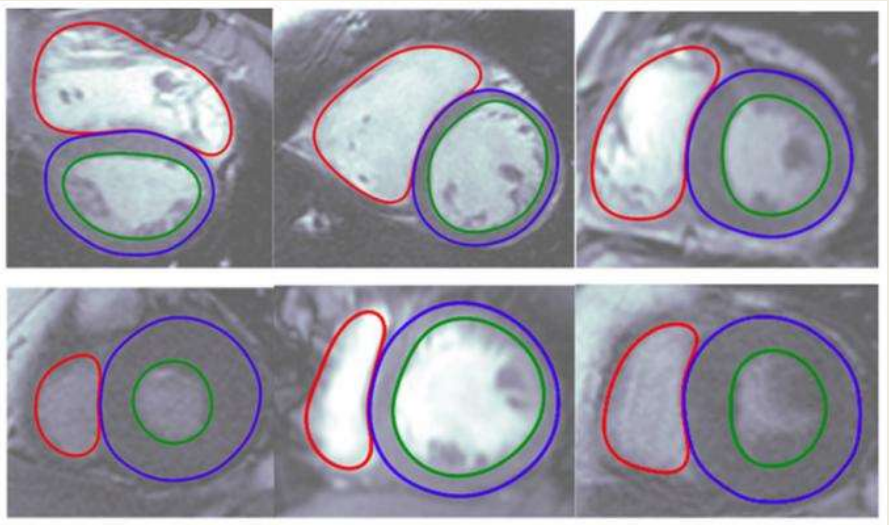
- Pattern recognition,
- Big Data,
- Deep Learning.



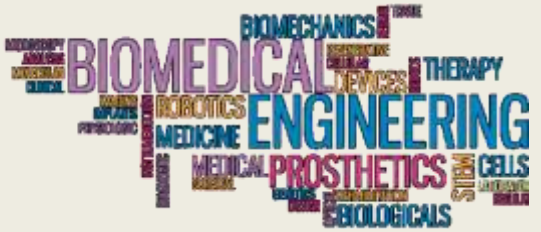


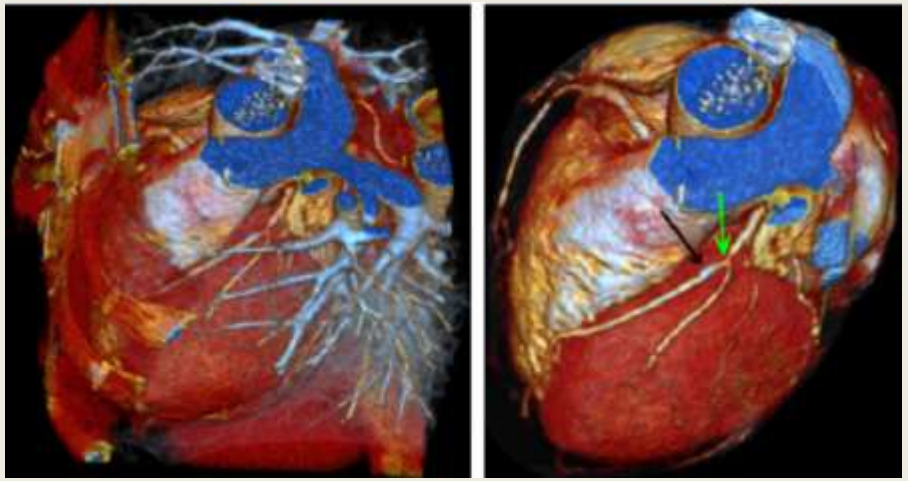


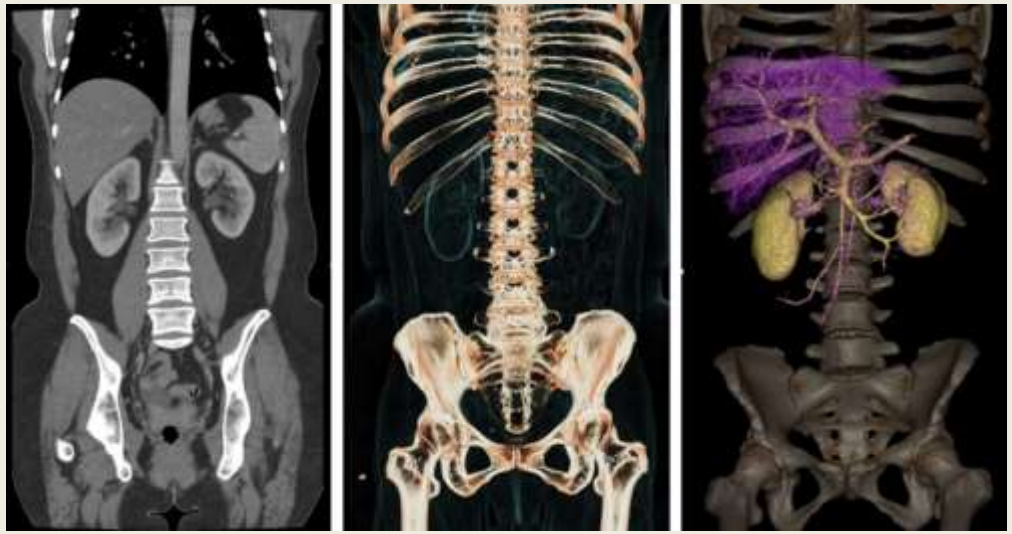




Visualization & Virtual & Augmented Reality

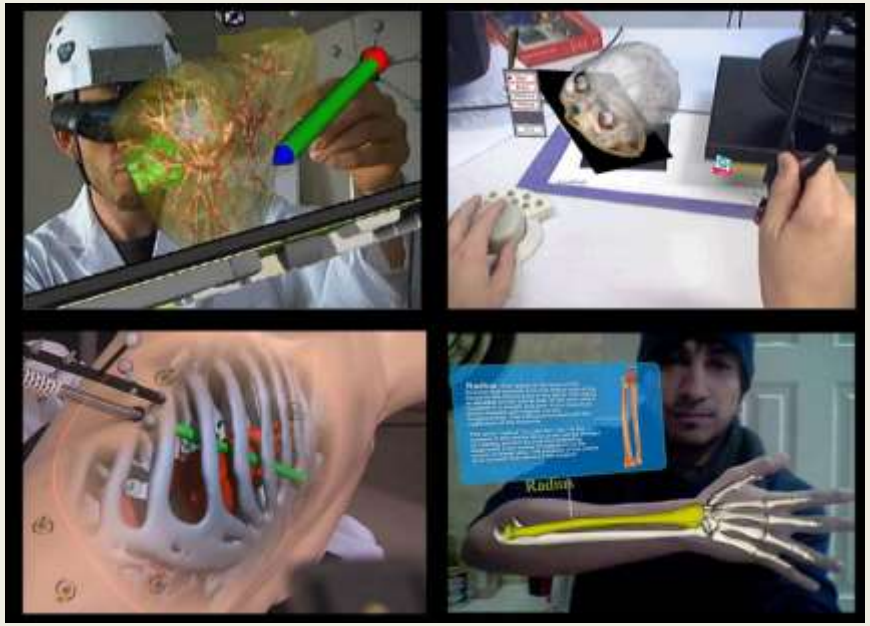




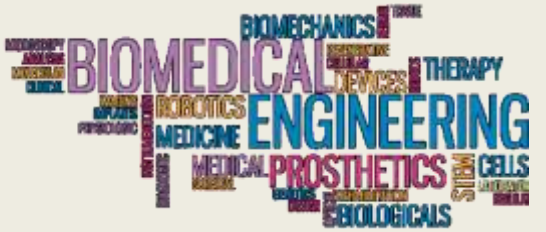


Visualization & Virtual & Augmented Reality

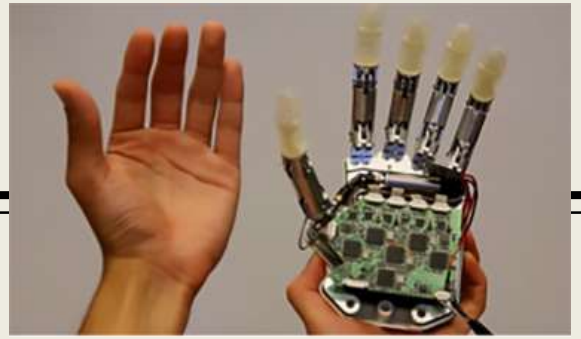
- Intervention surgeries

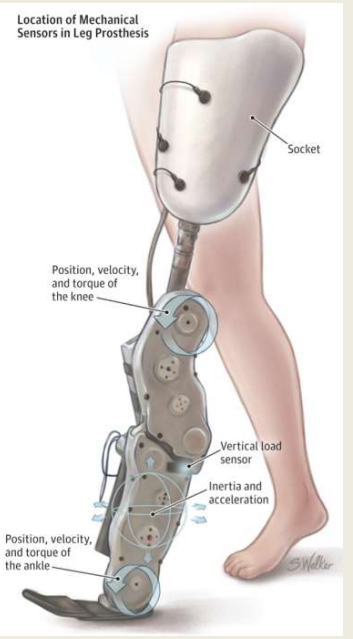


Mechatronics

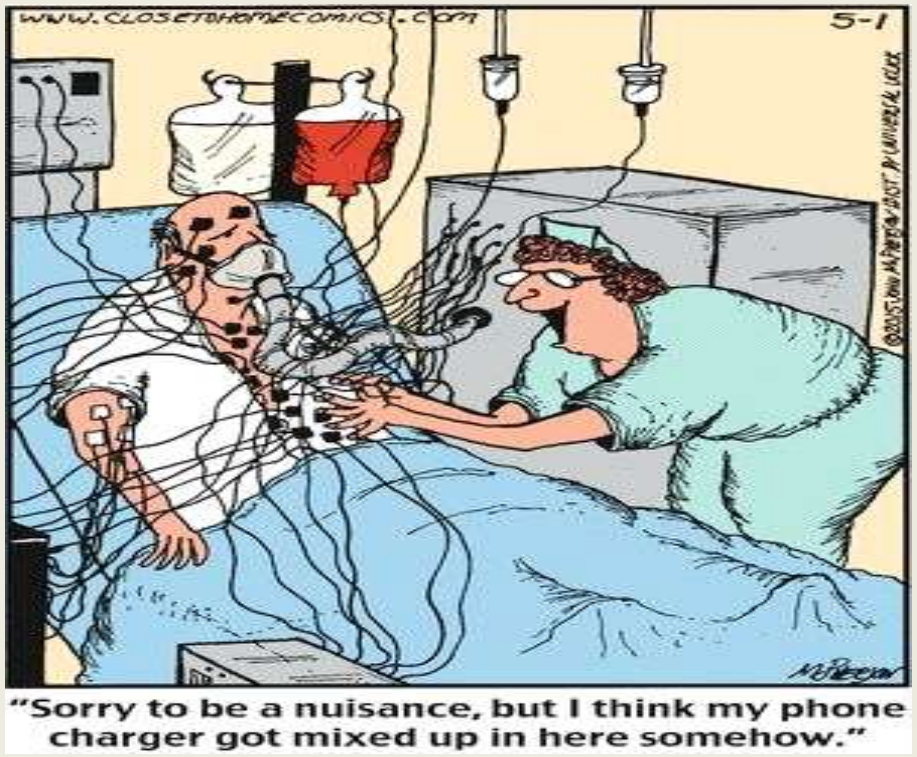


- Biomechanics, Rehabilitation, Orthopedic.
- Biomaterials, Tissue engineering.
- 3D printing and bio-fabrication, Prosthetics.

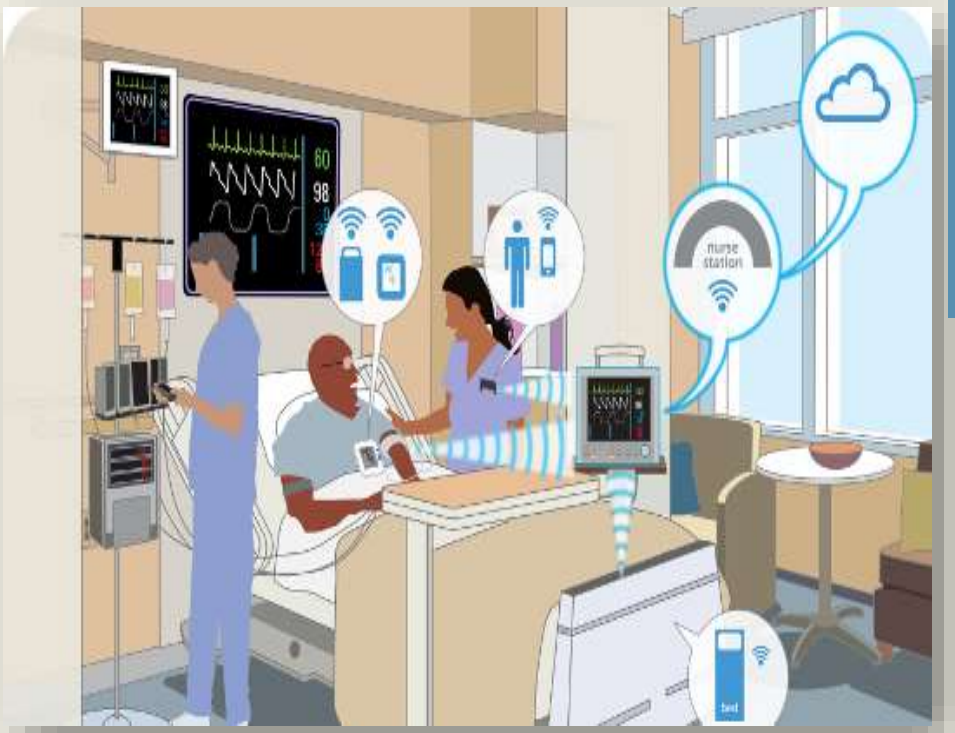


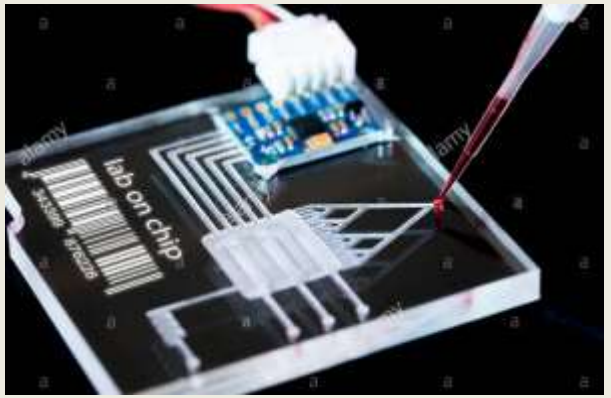


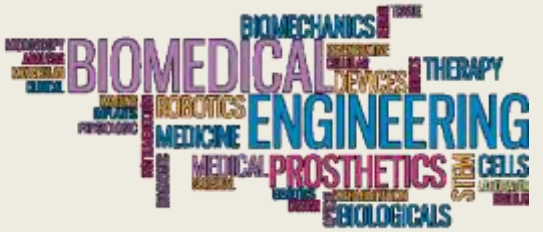
Tele-health, IoTs, Lab-On-A-Chip



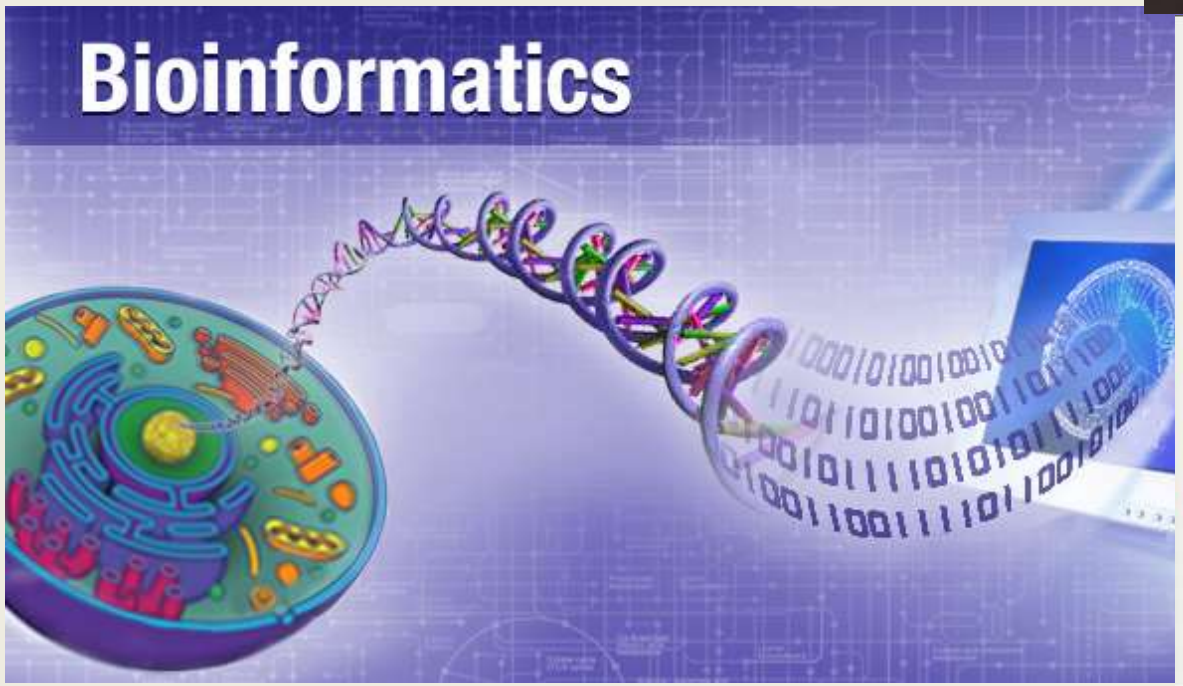
"Sorry to be a nuisance, but I think my phone charger got mixed up in here somehow."

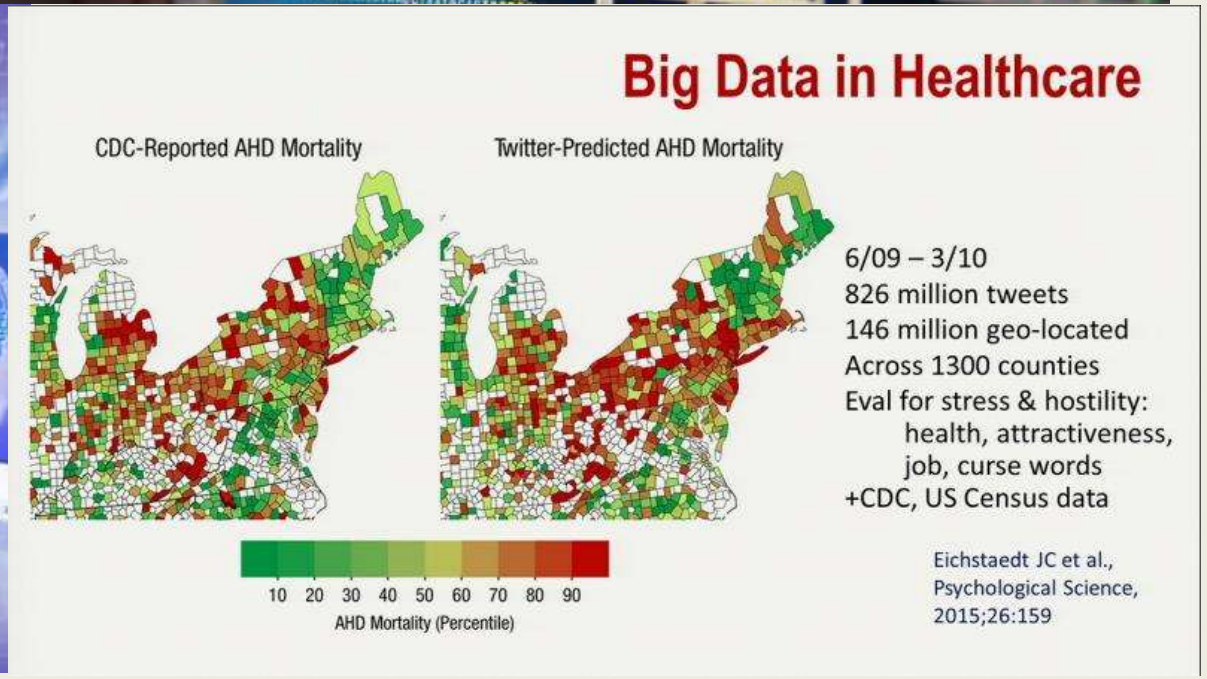




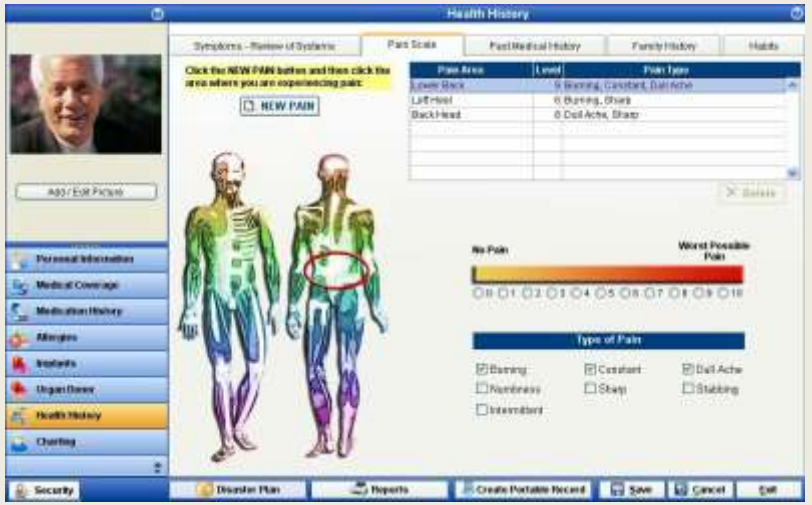


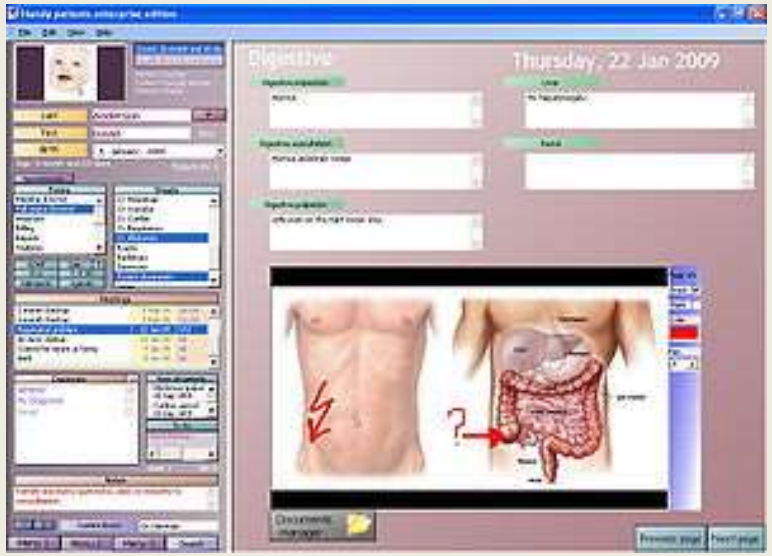
Bioinformatics, Genetic Engineering





Health Informatics, Medical SW, Security/Privacy

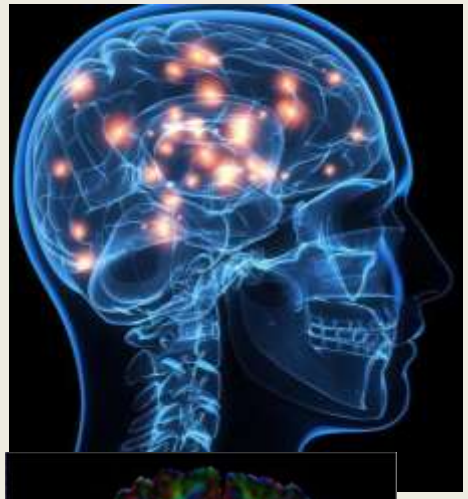


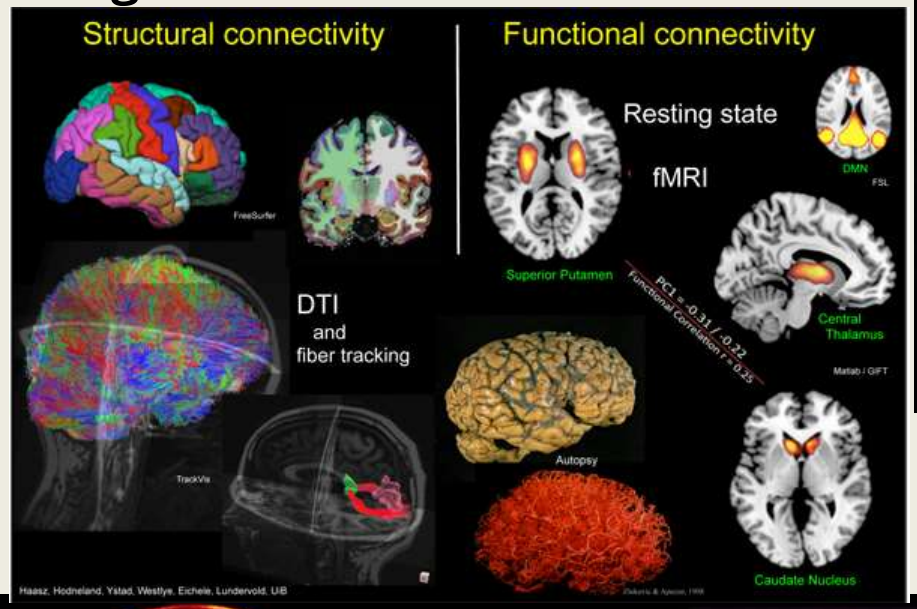


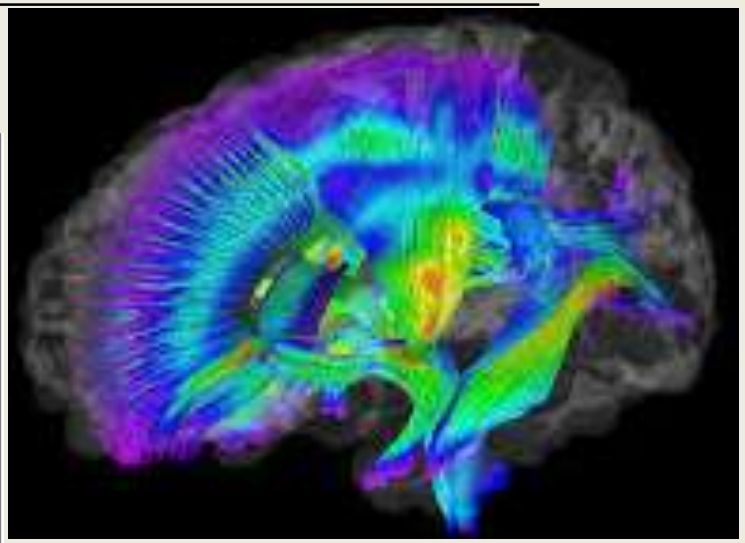
Clinical Engineering

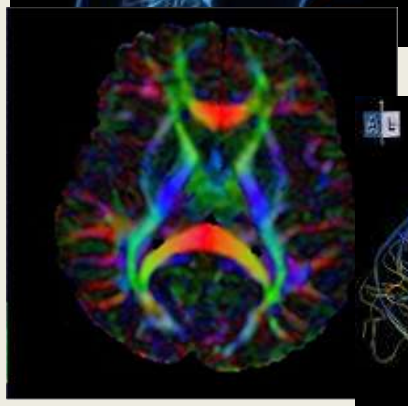
Bio-Inspired Systems

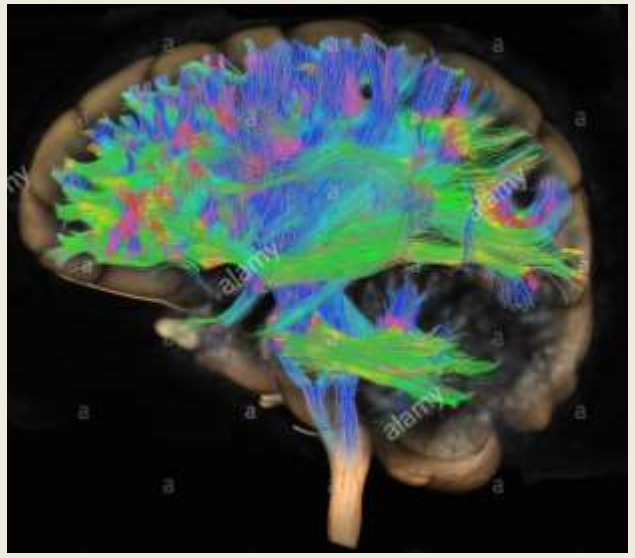
- Systems Physiology (Neural Eng, Neuroscience, Computational modelling)











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قسم هندسة طبية - الدور الثاني مبني عمارة

THANK YOU

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More on biomedical field:
https://www.youtube.com/watch?v=T1Win0bdrHw
https://www.youtube.com/watch?v=3QP2-bzluII
https://www.youtube.com/watch?v=xlUfHBhnjB0