Intro to BioMed

Not so much BioMaterials… but good to know!

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web. *https://biomed.teiwm.gr*

Μάρτιος						
				01	Σάββατο 02 (16:00-20:00)	Κυριακή 03 (10:00-14:00 και 15:00-20:00)
04	05	06	07	08	09	10
11	12	13	14	15	Σάββατο 16 (13:00-19:00)	Κυριακή 17 (11:00-15:00 και 16:00-19:00)
18	19	20	21	22	23	24
25	26	27	28	29	Σάββατο 30 (13:00-19:00)	Κυριακή 31 (11:00-15:00 και 16:00-19:00)

Απρίλιος						
01	02	03	04	05	**Σάββατο 06 (13:00-19:00)	**Κυριακή 07 (11:00-15:00 και 16:00-19:00)
08	09	10	11	12	Σάββατο 13 (13:00-19:00)	Κυριακή 14 (11:00-15:00 και 16:00-19:00)
15	16	17	18	19	*Σάββατο 20 (13:00-19:00)	*Κυριακή 21 (11:00-15:00 και 16:00-19:00)
22	23	24	25	26	27	28
29	30					

Μάϊος						
		01	02	03	Σάββατο 04 (13:00-19:00)	Κυριακή 05 (11:00-15:00 και 16:00-19:00)
06	07	08	09	10	Σάββατο 11 (13:00-19:00)	Κυριακή 12 (11:00-15:00 και 16:00-19:00)
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Ιούνιος						
					01	02
03	04	05	06	07	*Σάββατο 08 (13:00-19:00)	*Κυριακή 09 (11:00-15:00 και 16:00-19:00)
10	11	12	13	14	15	16
17	18	19	20	21	*Σάββατο 22 (13:00-19:00)	*Κυριακή 23 (11:00-15:00 και 16:00-19:00)
24	25	26	27	28	Σάββατο 25 (13:00-19:00)	Κυριακή 30 (15:00-19:00)

Ιούλιος						
01	02	03	04	05	Σάββατο 06 (13:00-19:00)	Κυριακή 07 (11:00-15:00 και 16:00-19:00)
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29	30	31				

Medical imaging & Modeling
Experimental Biomechanics
Pharmaceutical (Nano-) technology & Cosmetology
Biomaterials
Εργαστηριακά Μαθήματα (απαιτείται παρακολούθηση)

* Θεσσαλονίκη

** Σέρρες

Biomed

Introduce yourself! Just for today... Each one (starting with me) will stand up and introduce himself, stating her/his 1 name, background 2 (studies/work), what she/he is 3 looking for in this MSc and 4 something that's not widely known about them!

At the end of each day, we don't just leave the room! Each one has to point out something he learned during the class (maybe something that impressed them?) and what they would like to hear more about.

You will grade your peers based on skills we consider important! This is intended to expose all of you to the single most important attribute we have as a species… and that's a BioMedical fact!

Course Structure

Each Prof. provides the structure of his subject/course during the first hour of his class.

This semester's courses are

Medical imaging & Modeling *(Compulsory – 8 ECTS)*

Coordinator: *Assis. Prof. E. Varitis,* ***Lecturers:*** *Prof. C. David, Assis. Prof. D. Sagris, MSc. N. Ntinas*

Experimental Biomechanics *(Compulsory – 8 ECTS)*

Coordinators: *Prof. S. Maropoulos, Assis. Prof. A. Tsouknidas,* ***Lecturers:*** *Prof. Ch. Venetis, Assoc. Prof. F. Arabatzi, Dr. V. Panoutsakopoulos, MSc. D. Fasnakis*

Pharmaceutical (Nano-) technology & cosmetology *(Compulsory – 8 ECTS)*

Coordinator: *Dr. T. Karamanidou*

Biomaterials *(Elective course – 6 ECTS)*

Coordinator: *Assis. Prof. A. Tsouknidas,* ***Lecturers:*** *Prof. T. Mitsiadis, Prof. K. Koussoulas, Prof. S. Agathopoulos, MSc. D. Fasnakis*

Biomaterials *(Elective course – 6 ECTS)*

Saturday 02nd of March *(Kozani)****: Me***
Sunday 03rd of March *(Kozani)****:Me***
Saturday 11th of May *(Kozani)****: Prof. S. Agathopoulos (University of Ioannina)***
Sunday 12th of May *(Kozani)****: Me & MSc D. Fasnakis***
Sunday 30th of June *(Kozani or Thessaloniki)****: Prof. T. Mitsiadis (IOB Zurich, Switzerland) & Prof. Kousoulas (LSU, USA)***
Sunday 7th of July *(Kozani)****: Me***

Assignment *(30% of final grade)*

- The mandatory assignment will be handed out and discussed on Sunday the 12th of May. Students will be segmented in 3-4 member teams and are expected to prepare both, a presentation and short report.
- One team will present their findings and the remaining ones asked to argue against it, on Sunday the 26th of May!
- The presenting team (alternating presenters), will receive half their grade based on their presentation (by the remaining teams) and the other half based on their assignment.
- The debating teams will receive half their grade based on their arguments (by the presenting team) and the other half based on their assignment.

Final exam *(60% of final grade)* *The final exam of the course will be held on Saturday the 22nd of June at 14:00*

Class participation *(10% of final grade)* *engagement in terms of questions & answers and hands-on in the Lab*

Starting (literally) today you are expected to contribute to knowledge, not only to learn about things!

Lygometry (“lygo” latin for shadow or darkness and ”metry” Greek for measurement)…

As a fairly recent scientific principle, it is more likely you’ll contribute to a breakthrough in biomedical engineering than provide new knowledge on gravity! *It’s easy to think different if you are the most ignorant in the room!*

If you do either one, please mention me as your favorite teacher in your press conference ☺

How does the human mind work?

- *The **7** problem…*
- *Write it down!*
- *How can we access billions of information quicker than a quantum computer? Priming!*

So… no we do not know how the mind works?

Do we at least know how a simple mind works?

So we don’t know how the human mind works… at least we know everything about the human anatomy, or do we?

Of course we don’t!

- The Mesenterium was fully characterized in 2017!
- Humans are still evolving. Researchers tracking eight million mutations found that a number of genes – such as the one that predisposes you to Alzheimer’s disease – are gradually being filtered out of human DNA.
- Lungs do more than help us breathe – a surprising discovery has found they also make blood. The organ, present in mammals, is believed to produce more than 10 million platelets (tiny blood cells) per hour.

Conventional Medicine is turning into BioMedical Technology… over the past 5 years, tech companies (e.g. Apple) are obsessing over who gathers medical information (e.g. from Wearables)… why?
And who invents, designs, manufactures and programs these wearables? Physicians?
Our world is changing at an exponential pace, because we are exposed to a staggering amount of information.
This may not be obvious yet to a lot of sectors, but it has been so in economics for a decade, giving birth to… exonomics!

Annual net-income 5.4 b$.

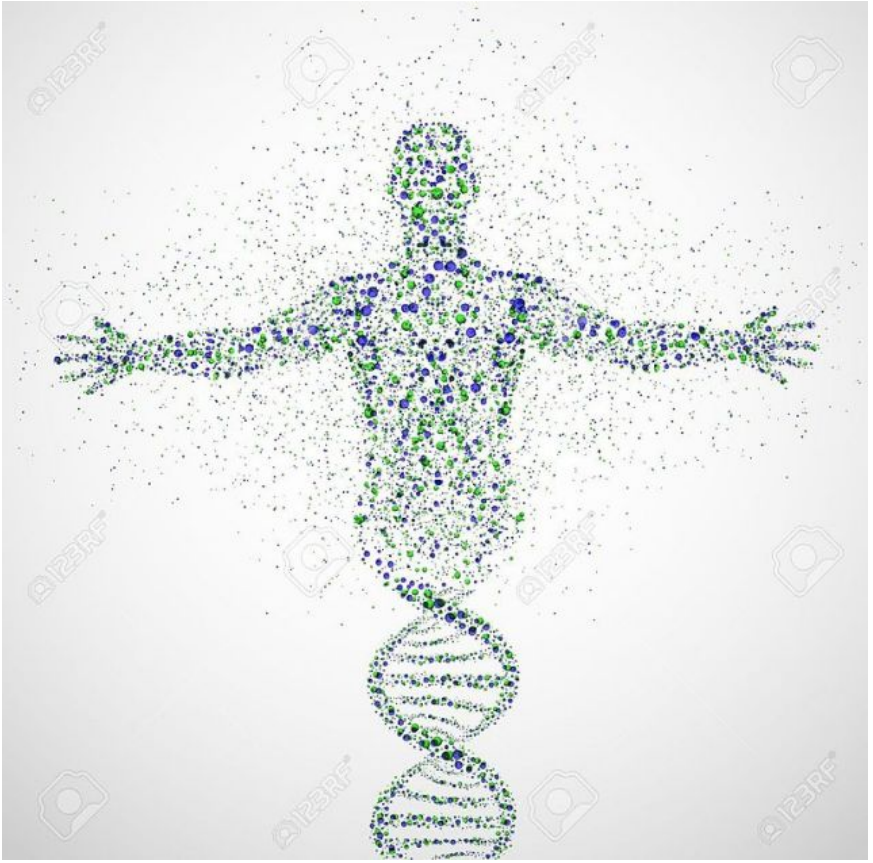

«United Breaks Guitars» by Dave Carroll, σε 2 μήνες είχε 10εκ. Θεάσεις και >>100.000 likes!


MinION

BioMedical technologies are still in their period of infancy!

- In 2001, the human gene project analyzed the first… human genome! It costed 3.000.000.000 $.
- Anyone care to guess how much such an analysis costs today?
- By 2020 (not 2030), the cost of knowing whether you're pre-disposed to cancer, or how you'll respond to pharmaceutical treatment will be insignificant!

In a couple of years from now, we'll have access to DNA databases with millions of subjects!
If you want to innovate… think about an application of this database… today!



We'll provide insight to most of the useful knowledge and tools you might need to do so, but it is up to you!

…now, let's get serious

Lecture 1: BioMaterials