

BIOPHYSICS

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Who am I?

- Assistant Professor, PhD
 - Department of Biomedical Engineering
 - Faculty of Engineering and Architecture
 - Izmir Katip Celebi University
- Chief Executive Officer (CEO)
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Where am I?

- Official
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- Company
 - E-mail: yalcin@islerya.com
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- Personal
 - Facebook: <http://www.facebook.com/isler.yalcin>
 - Instagram: <https://www.instagram.com/islerya/>

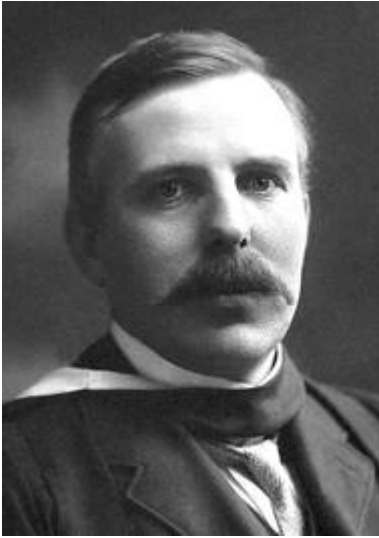
How ?

- Lectures
 - Presentations: <http://me.islerya.com/biophysics.php>
- Mid-Term
 - 40%
 - Date: 24-November-2017
 - Subjects: First 8 lectures
- Final
 - 60%
 - Date: Not known yet
 - Subjects: SORRY, BUT ALL :)

What is Biophysics?

- an interdisciplinary science
- physics of biology
- uses of the principles, theories, and methods of physics to understand biological systems.

What is Physics?

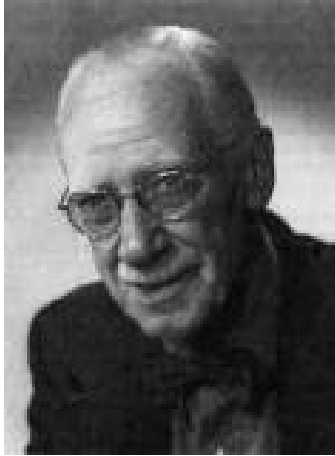


“Physics is the only real science.
The rest are just stamp collecting.”

-- Ernest Rutherford

This statement is not entirely true! But, there is no doubt that without physics, and interaction between different disciplines natural sciences wouldn't be like this.

What is Biophysics?



“Biophysics includes everything interesting and excludes everything trivial.”

-- Kenneth Stewart Cole

“After 25-year professional life, I have to admit that this is completely true, in my opinion.”

-- Yalcin Isler

Hybrid Disciplines

- The structures and functions of living things are very complex to cope with for a single discipline as biology.
- Hybrid disciplines emerged
 - Biochemistry
 - Biophysics
 - Bioengineering
 - **Biomedical Engineering**

BIOPHYSICS

- Physics of Membrane Potentials
- Radiation Biophysics
- Biomechanics
- Medical Imaging Techniques
- Thermodynamics and Bioenergetic

References

- Prof. Dr. Gürbüz Çelebi. Biyofizik. Tıp ve Diş Hekimliği Öğrencileri için. Barış Yayınları Fakülteler Kitabevi, Cilt I, III.Baskı, İzmir, 2005.
- Prof. Dr. Ferit Pehlivan. Biyofizik. Hacettepe Taş. 4. Tıpkı Basım, Ankara, 2009.
- Vasantha Pattabhi, N. Gautham. Biophysics. Kluwer Academic Publishers. 2002.
- <http://www.deu.edu.tr/userweb/mehmet.kartal/dosyalar/KOVELENTBAG1.pdf>
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- <http://www.chemprofessor.com/imf.htm>
- <http://reich-chemistry.wikispaces.com/Burgess-Chrost.MMA.2010.atomichistory>
- http://upload.wikimedia.org/wikipedia/commons/thumb/f/ff/Plum_pudding_atom.svg/2000px-Plum_pudding_atom.svg.png
- <https://solbergsphyscience.wikispaces.com/The+Structure+of+the+Atom>
- <http://bdml.stanford.edu/twiki/bin/view/Rise/InvestigationOfVanDerWaalsForce.html>

Syllabus

- #1: Introduction (**here you are**)
- #2: Basic concepts
- #3: Water Body Fluids & Aqueous Solutions
- #4: Cell Membrane
- #5: Transport Phenomena – 1
- #6: Transport Phenomena – 2
- #7: Transport Phenomena – 3
- MID-TERM
- #8: Bioelectric Potentials – 1
- #9: Bioelectric Potentials – 2
- #10: Bioelectric Potentials – 3
- #11: Bioelectric Potentials – 4
- #12: Radiation
- #13: Radiation (**continued**)



Good Evening!