COURSE CODE: BCH 311

COURSE TITLE: BIOENERGETICS

NUMBER OF UNITS: 2 Units

COURSE DURATION: Two and half hours per week

**INTENDED LEARNING OUTCOMES**

At the completion of this course, students are expected to be able to:

1. Discuss the various orders of reactions
2. Discuss the electron transport chain and oxidative phosphorylation
3. Discuss the regulation of ATP
4. Explain how chemicals are transported across the biological membranes

**COURSE DETAILS:**

**Week 1-2:** Reaction orders, first, second, third and zero order reactions.

**Week 3:** High-energy compounds; chemical potentials, electrochemical

potentials

**Week 4-5:** Electron transport system and oxidative phosphorylation

**Week 6-7:** Regulation of ATP production**,** Biological oxidation-reduction

reactions

**Week 8***:* Buffers and buffer systems

**Week 9:** Catalysis and activation energy

**Week 10-11:** Chemical transport across biological membranes.

**Week 12:** Revision

**Books:**

* Leninger principles of Biochemistry (7th Edition)
* Biochemistry, the chemical reactions of living cells. David Metzler (2nd edition)
* Harpers illustrated Biochemistry. Robert K. Murray, Daryl Granner, Victor Rodwell (27 ed.) ISBN 007-125301-7
* Biochemical calculations by I. H. Segel (John Wiley and Sons)

LECTURERS

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