



**BIOTECHNOLOGY
& BIOENGINEERING**

ANIMAL PHYSIOLOGY

Instructor Name : PROF. MAINAK DAS (IIT Kanpur - Department of biological sciences & bioengineering)

COURSE DURATION : Jul-Oct 2017 **CORE / ELECTIVE :** Core **UG / PG:** Both

PRE-REQUISITES : Biology at standard 10th (Secondary school examination)

INTENDED AUDIENCE : UG and PG students pursuing biology, biotechnology, zoology and bio-engineering

INDUSTRIES APPLICABLE TO : Biomedical industries

COURSE OUTLINE : The course will be an informal journey to know your own body. It will provoke you to think the following: How our body functions? What it is made up of and what are the organizational hierarchy of your body? How its regular function is disrupted and how the body tries to restore its normal functioning? How the body adjusts itself under extreme physiological situations and how it re-calibrates its functions?

ABOUT INSTRUCTOR : Prof. Mainak Das is a faculty of IIT Kanpur India in the department of biological sciences & bioengineering since April 26 2010. He did his bachelors degree (1989-1994) in agriculture from College of Agriculture Indore. Thereafter he did his post graduate degree (1994-1997) in animal physiology from National Dairy Research Institute Karnal India. Following his post graduate studies, he worked as researcher in IISc Bangalore India (1997-1999), University of Neuchatel, Switzerland (1999-2000), University of Clemson, USA (2000-2004) and in University of Central Florida, USA (2004-2010). He did his doctoral studies from University of central Florida (2004-2008), while working as a full time employee of the university. He introduced the regular physiology course for the PG students in IIT Kanpur in 2011. He has wide interest in physiology, sensors, energy and bioelectronics and maintains an active research team at IT Kanpur, India. You can visit his website by clicking the following link: <http://home.iitk.ac.in/~mainakd/mainak/Welcome.html>

COURSE PLAN

Week 1: Introduction

Week 2: Skeletal system

Week 3: Neural system

Week 4: Neural system

Week 5: Endocrine system

Week 6: Blood and heart

Week 7: Lymphatic and respiratory system

Week 8: Digestive system

Week 9: Urinary system and fluid-electrolyte balance

Week 10: Reproductive system and extreme physiology

Week 11: Will be updated soon

Week 12: Will be updated soon