Indian Institute of Technology Guwahati
Proposal for a New Course / Revision of a Course

Course Number & Title: BT 633 & Human Biology and Diseases	
L-T-P-C: 3-0-0-6	
Type of Letter Grading (Regular Letter Grades / PP or NP Letter Grades): Regular Letter Grades	
Kind of Proposal (New Course / Revision of Existing Course): Revision of Existing Course	
Offered as (Compulsory / Elective):Electives	
Offered to: B Tech/M Tech/PhD	
Offered in (Odd/ Even / Any):Any	
Offered by (Name of Department/ Center):BSBE	
Pre-Requisite: Nil.	
Preamble / Objectives (Optional): This course is designed to give basic understanding of human body structure and function to engineering students with specialist interest in biomedical areas. In addition to basic anatomy and physiology, students will be introduced to preliminary concepts in pathology of common diseases and present and state of the art therapeutic aims and advancements. The main focus of the course will be on making the students understand the human body and diseases which will stimulate them to think and develop engineering solutions for medical problems.	
Course Content/ Syllabus Introduction to Medical Sciences: Bio-medical nomenclature; Homeostasis and chemistry of life; Cells, tissues and organs; Introduction to gross anatomy; Histology of blood vessels, bone and muscle; Blood, Circulation and Respiration: Biochemistry of blood; Heart structure function, Arteries and veins, lymphatics; Lungs and respiration Nutrition, Digestion and Excretion: Essential Nutrients and deficiencies; Digestive system and Digestion, Kidneys and excretion Communication and Homeostasis: Bones,joints and movements; Communication systems of the body including endocrine and nervous systems; Bio-electric signals; Blood Pressure, temperature and acid-base regulation. Pathology of common diseases: Pathological basis of diseases; Obesity and complications; Diabetes and complications;Bone andjoint diseases; Cancer patho-physiology; Latest advances in treatment of hypertension, heart attack, stroke, diabetes, arthritis and cancer.	
Books (In case UG compulsory courses, please give it as “Text books” and “Reference books”. Otherwise give it as “References”.	
Text book and References: (Format: Authors, *Book Title in Italics font,* Volume/Series, Edition Number, Publisher, Year.)	
1.	Daniel D. Chiras, Human Biology, 7th Edition,Jones &Bartlett Pub, 2010.
2.	W. Mark Saltzman, Biomedical Engineering:BridgingMedicine and Technology, Cambridge University Press, 2009
3.	Nicholas A. Boon, Davidson's Principles and Practice of Medicine, 20th Edition, Churchill Livingstone Elsevier, 2006
4.	Henry Gray, Lawrence H. Bannister, Martin M.Berry, Peter L. Williams, Gray's Anatomy: The Anatomical Basis of Medicine & Surgery, 38th Edition,Churchill Livingstone, 1995.
5.	Ganong, Review of Medical Physiology, 20th Edition, McGraw Hill, 2001.
6.	Dennis L. Kasper, Eugene Braunwald, Stephen Hauser, Dan Longo, J. Larry Jameson, Anthony S.Fauci, Harrison's