	Biopolymers in controlled release systems. Synthetic polymeric membranes and their biological applications.	
4	Biocompatibility & toxicological screening of biomaterials: Definition of biocompatibility, blood compatibility and tissue compatibility. Toxicity tests: acute and chronic toxicity studies (in situ implantation, tissue culture, haemolysis, thrombogenic potential test, systemic toxicity, intracutaneous irritation test), sensitization, carcinogenicity, mutagenicity and special tests.	8
5	Testing of biomaterials/Implants: In vitro testing (Mechanical testing): tensile, compression, wears, fatigue, corrosion studies and fracture toughness. In-vivo testing (animals): biological performance of implants. Ex-vivo testing: in vitro testing simulating the in vivo conditions. Standards of implant materials	9
	Total	42

Books :-

S.No.	Name of Books/ Author/Publisher
1.	Jonathan Black, Biological Performance of materials, Marcel Decker, 1981
2.	Eugene D. Goldbera , Biomedical Ploymers, Akio Nakajima.
3.	A. Rembaum & M. Shen, Biomedical Polymers, Mercer Dekkar Inc. 1971
4.	Lawrence Stark & Gyan Agarwal , Biomaterials
5.	L. Hench & E. C. Ethridge, Biomaterials - An Interfacial approach.

Basic Epidemiology

Details of course:-

Course Title	Course Structure			Pre-Requisite
	L	T	P	
Basic Epidemiology (BT340)	3	0	2	NIL

Course Objective:

To provide a foundational understanding of the principles and concepts of epidemiology, including the study of the distribution and determinants of health-related states or events in specific populations.

Course Outcome (CO):

1. To demonstrate a solid understanding of basic epidemiological concepts and terminology, including incidence, prevalence, morbidity, and mortality.
2. Students will be able to apply epidemiological methods to analyze the distribution and determinants of health-related events, effectively using statistical tools and techniques.
3. To develop the ability to critically evaluate and interpret epidemiological data and research findings, assessing the validity and reliability of studies.
4. Students will be able to apply epidemiological knowledge to design, implement, and evaluate public health interventions, contributing to the control and prevention of diseases.
5. Students will understand the ethical considerations in conducting epidemiological research and practice, ensuring adherence to ethical standards in their professional activities.

S.No.	Content	Contact Hours
1	Definitions of epidemiology - Epidemiology in Public Health- Natural history of disease - Historical aspects of Epidemiology - Common risk factors- Tools of Epidemiology- Measures of Disease, Risk Rates, Descriptive Epidemiology, Measuring infectivity, Survey methodology including census procedures, Surveillance, outbreak investigation in public health & contact investigation	8
2	Epidemiological study designs, Bias, confounding and interaction, Causal association, Disease Surveillance	9
3	Research Question, Study Designs, Literature Retrieval, Organising Literature, Critical Appraisal, Diagnostic tests, Measurement issues qualitative research.	9
4	Mixed designs- Statistical support to epidemiology (Sample selection, Sample size), Tools, Bias, Outcome measures, Analysis and reporting, Research Ethics.	8
5	Containing the Spread of Epidemics, The Surveillance of Communicable Diseases, Quarantine: Spatial Strategies, Vaccination: Interrupting Spatial Disease Transmission, Eradication, Intervention: Modelling, Demographic Impact and the Public Health	8
	Total	42

Books:-

S.No.	Name of Books/ Author/Publisher
1.	Gordis Leon. Epidemiology (Fifth edition) , Elsevier Saunders, 2013.
2.	Dona Schneider and David E. Lilienfeld. Lilienfeld's Foundations of Epidemiology, Fourth Edition, Oxford University Press, USA, 2015.