

VIRTUAL REALITY
[As per Choice Based Credit System (CBCS) scheme]
(Effective from the academic year 2017 - 2018)
SEMESTER – VIII

Subject Code	17IS833	IA Marks	40
Number of Lecture Hours/Week	3	Exam Marks	60
Total Number of Lecture Hours	40	Exam Hours	03

CREDITS – 03

Module – 1	Teaching Hours
Introduction : The three I's of virtual reality, commercial VR technology and the five classic components of a VR system. Input Devices : (Trackers, Navigation, and Gesture Interfaces): Three-dimensional position trackers, navigation and manipulation, interfaces and gesture interfaces. Text book1: 1.1, 1.3, 1.5, 2.1, 2.2 and 2.3	08 Hours
Module – 2	
Output Devices: Graphics displays, sound displays & haptic feedback. Text book1: 3.1,3.2 and 3.3	08 Hours
Module – 3	
Modeling : Geometric modeling, kinematics modeling, physical modeling, behaviour modeling, model management. Text book1: 5.1, 5.2 and 5.3, 5.4 and 5.5	08 Hours
Module – 4	
Human Factors: Methodology and terminology, user performance studies, VR health and safety issues. Text book1: 7.1, 7.2 and 7.3	08 Hours
Module – 5	
Applications: Medical applications, military applications, robotics applications. Text book1: 8.1, 8.3 and 9.2	08 Hours
Course outcomes: The students should be able to:	
<ul style="list-style-type: none"> • Illustrate technology, underlying principles, its potential and limits and to learn about the criteria for defining useful applications. • Explain process of creating virtual environments 	
Question paper pattern:	
The question paper will have ten questions. There will be 2 questions from each module. Each question will have questions covering all the topics under a module. The students will have to answer 5 full questions, selecting one full question from each module.	
Text Books:	
1. Virtual Reality Technology, Second Edition, Gregory C. Burdea & Philippe Coiffet, John Wiley & Sons	
Reference Books:	