VIRTUAL REALITY
[As per Choice Based Credit System (CBCS) scheme]
(Effective from the academic year 2016 -2017)
SEMESTER – VIII

Subject Code	15IS833	IA Marks	20
Number of Lecture Hours/Week	3	Exam Marks	80
Total Number of Lecture Hours	40	Exam Hours	03

CREDITS – 03

Course objectives: This course will enable students to

- Explain understanding of this technology, underlying principles, its potential and limits and to learn about the criteria for defining useful applications.
- Illustrate process of creating virtual environments

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**	**10 Hours**
Module – 2	
Output Devices: Graphics displays, sound displays & haptic feedback. **Text book1: 3.1,3.2 and 3.3**	**10 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**	**10 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**	**10 Hours**
Module – 5	
Applications: Medical applications, military applications, robotics applications. **Text book1: 8.1, 8.3 and 9.2**	**10 Hours**

Course outcomes: The students should be able to:

- 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: