Course Code:	Course Title	Credit
CSDO7021	User Experience Design with VR	3

Prerequisite: Web Technologies; Software Engineering	
Course Objectives:	
1	To study and understand importance of user experience design principles
2	To understand elements of user experience design
3	To encourage students to participate in designing futuristic applications
4	To understand the need and significance of Virtual Reality
5	To understand the technical and engineering aspects of virtual reality systems
Course Outcomes:	
1	To Apply principles of user experience
2	To apply emerging and established technologies to enhance User Experience design
3	To create interface for international standards with ethics
4	To evaluate user experience.
5	Describe how VR systems work and list the applications of VR
6	Design and implementation of the hardware that enables VR systems to be built

Module		Content	Hrs
1		**Introduction**	**04**
	1.1	Introduction to interface design, Understanding and conceptualizing Interface, understanding user's conceptual cognition, Core Elements of User Experience, Working of UX elements	
2		**The UX Design Process – Understanding Users & Structure:**	**08**
	2.1	Defining the UX, Design Process and Methodology, Understanding user requirements and goals, Understanding the Business Requirements/Goals, User research, mental models, wireframes, prototyping, usability testing.	
	2.2	Visual Design Principles , Information Design and Data Visualization Interaction Design, UI Elements and Widgets, Screen Design and Layouts	

3		**UX Design Process: Prototype and Test**	**06**
	3.1	Testing your Design, Usability Testing, Types of Usability Testing , Usability Testing Process, Preparing and planning for the Usability Tests,	
	3.2	Prototype your Design to Test, Introduction of prototyping tools, conducting Usability Test, communicating Usability Test Results	
4		**UX Design Process: Iterate/ Improve and Deliver**	**05**
	4.1	Understanding the Usability Test, findings, Applying the Usability Test, feedback in improving the design.	
	4.2	Communication with implementation team. UX Deliverables to be given to implementation team	
5		**Introduction to Virtual Reality**	**08**
	5.1	Defining Virtual Reality, History of VR, Human Physiology and Perception, Key Elements of Virtual Reality Experience, Virtual Reality System, Interface to the Virtual World-Input & output- Visual, Aural & Haptic Displays, Applications of Virtual Reality	
	5.2	Representation of the Virtual World, Visual Representation in VR, Aural Representation in VR and Haptic Representation in VR	
6		**Applying Virtual Reality**	**08**
	6.1	Virtual reality: the medium, Form and genre, What makes an application a good candidate for VR, Promising application fields, Demonstrated benefits of virtual reality, More recent trends in virtual reality application development, A framework for VR application development	

Textbooks:	
1	Interaction Design, Beyond Human Computer Interaction, Rogers, Sharp, Preece Wiley India Pvt Ltd.
2	The essentials of Interaction Design, Alan Cooper, Robert Reimann, David Cronin
3	Designing The user Interface by Shneiderman, Plaisant, Cohen, Jacobs Pearson
References:	

1	The Elements of User Experience by Jesse James Garrett
2	Don’t make me think, by Steve Krug
3	Observing the User Experience: A Practitioner's Guide to User Research by Mike Kuniavsky

Assessment:	
Internal Assessment:	
Assessment consists of two class tests of 20 marks each. The first class test is to be conducted when approx. 40% syllabus is completed and second class test when additional 40% syllabus is completed. Duration of each test shall be one hour.	
End Semester Theory Examination:	
1	Question paper will comprise of total six questions.
2	All question carries equal marks
3	Questions will be mixed in nature (for example supposed Q.2 has part (a) from module 3 then part (b) will be from any module other than module 3)
4	Only Four question need to be solved
5	In question paper weightage of each module will be proportional to number of respective lecture hours as mention in the syllabus

Useful Links	
1	https://archive.nptel.ac.in/courses/124/107/124107008/
2	https://nptel.ac.in/courses/106106138
3	https://www.coursera.org/specializations/virtual-reality