Name of the Program	B.A. / B.Sc. (LIBERAL EDUCATION)			Year/ Semester:	3rd / 5th
Course Name	Virtual Reality	Course Code:	ANI302	Type:	Theory
Credits	04			Total Sessions Hours:	60 Hours
Evaluation Spread	Internal Continuous Assesment:	50 Marks		End Term Exam:	50Marks
Type of Course	○ Compulsory	◉ Core		○ Creative	○ Life Skill
Course Objectives	1. To facilitate students getting well versed in varied applications of virtual reality. 2. To create virtual environments, applications, and games. 3. This course will help students learn the basic principles of virtual reality applications and get to know how games differ from desktop apps. It will help students build various types of VR experiences and use Unity to develop VR applications.				

Course Outcomes(CO): *After the successful course completion, learners will develop following attributes:*

Course Outcome (CO)	Attributes
CO1	To identify the appropriate policies and procedures of VR for optimal use, apply Industry standards and best practice. To create new applications with VR/AR technology.
CO2	To discuss the various pros & cons of existing VR/AR technology.
CO3	To analyze and choose the appropriate VR implementation methodology based on the Nature of the project.
CO4	To apply knowledge and skills in creative ways to new situations in professional Practice and/or further learning in the field of VR/AR.
Pedagogy	Interactive, discussion-bases, student-centered, presentation.
Internal Evaluation Mode	Mid-term Examination: 20 Marks Activity: 10 Marks Class test: 05 Marks Online Test/Objective Test: 05 Marks Assignments/Presentation: 05 Marks Attendance: 05 Marks

Session Details	Topic	Hours	Mapped CO
Unit 1	**Introduction To Virtual Reality & VR Interaction** Definition and introduction – 3D animation and Augmented reality – Four Key Elements - Input devices – Output devices - Immersive and Non-Immersive Virtual Reality - Advantages & Disadvantages. Human Factors in VR-Methodology and Terminology-User Monitoring – Degrees of Freedom (DOF) - User Performance Studies-VR health and Safety Issues-VR and Society- Human-	15	CO1

	Computer Interaction – VR in psychology. **Activity :** Creating Virtual Environment			
Unit 2	**Interface To The Virtual World** Glossary of VR terminology – Visual Displays - Head Mounts Display (HMD), Boom, Cave, Input Devices and Sensual Technology - Characteristic of Immersive VR Shared Virtual Environments. **Activity**: Interactive VR for Head Mount Displays (HMDs)	15	CO2	
Unit 3	**VR In Business** VR for Everyone - Mainstream VR Business-Adoption in Gaming Industry-Entertainment Sports- Feature Films-Retail-Social media-education. **Activity**: Virtual sets Costing – Virtual Reality Markup Language – Computing VR - Past, present & future of VR.	15	CO3	
Unit 4	**VR Videos And Streaming Applications:** Virtual surround sound-360 degree cameras-editing 360 videos-streaming- Virtual Reality Applications-Applications of Virtual Reality – Gesture Recognition -Education &training – Entertainment – Medical applications. **Activity :** Immersive 360 degree view	15	CO4	

CO-PO and PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO6
CO1	1			2	1		1			2	1			
CO2		2				3				1		1		3
CO3	1		1									2		
CO4					2					2			1	

Strongcontribution-3,   Averagecontribution-2,   Lowcontribution-1,

Suggested Readings:

Text- Books	1. The VR Book: Human-Centered Design for Virtual Reality by Jason Jerald
Reference Books	https://msl.cs.uiuc.edu/vr/vrbook.pdf https://www.morganclaypoolpublishers.com/catalog_Orig/samples/9781970001136_sample.pdf
Para Text	**Unit 1:** 1. https://youtu.be/i3DbJwy0R6E 2. https://youtu.be/XLP4YTpUpBI 3. https://youtu.be/hEdzv7D4CbQ **Unit 2:** 1. https://youtu.be/T8-0B5Ixlcg **Unit 3:** 1. https://youtu.be/mM4r2o-9kN4

	Unit4: 1. https://youtu.be/ycV7iFG_l-U	

Recapitulation & Examination Pattern

Internal Continuous Assesment:

Component	Marks	Pattern
Mid Semester	20	**Section A:** Contains **10** MCQs/Fill in the blanks/One Word Answer/ True-False type of questions. Each question carries **0.5 mark.** **Section B:** Contains **07** descriptive questions out of which **05** questions are to be attempted. Each question carries **03 marks**.
Activity/ Practical	10	Will be decieded by subject teacher.
Class Test	05	Contains **05 descriptive questions.** Each question carries **01** mark.
Online Test/ Objective Test	05	Contains **10 multiple choice questions.** Each question carries **0.5** mark.
Assignment/ Presentation	05	Assignmet to be made on topics and instruction given by subject teacher.
Attendance	05	As per policy.
Total Marks	**50**	

Course created by: **Ms. Iffat Jahan**

Signature:

Approved by: Mr. Gaurav Rawat

Signature: