

MSC (CA&IT) - Semester: II*(Effective from year 2023-24)*

Course Code:	CAIT-203	Course Title:	Latest Trends in IT
Course Credits:	04	Hour of Teaching/Week:	04
Internal Assessment Marks:	50	External Exam Marks:	50
Exam Duration	2.5 Hrs		

Unit	Contents
1	IOT What isIoT?, Examples of IoT, Appliances, Smart Health care, Oil & Gas Industry, Smart Places, IoT v/s Computer v/s Smartphone, Adoption and trends in IoT, Social benefits of IoT, Risk-Security-Privacy of IoT. Introduction to Industrial Revolution 4.0, Current application related to Industrial Revolution 4.0, Introduction to devices related to IoT (Ardunio, Raspberry Pi, PLCs) Arduino Basics IDE, Setting up Arduino Board, Arduino Sketch, Uploading and Running Blink Sketch, Creating and Saving Sketch, Structure of Sketch, Primitive Types, Functional Blocks, Conditions, Loops, Operators Working With Sensors LED, LM393 Speed Sensor, Touch Sensor, MQ-2 Gas Sensor, Temperature Sensor LM35, Light Dependent Resistor(LDR), Humidity plus Temperature Sensor Module, IR Infrared, Ultrasonic Sensor (HC-SR04)
2.	AI What is Artificial Intelligence?, Examples of AI Systems, Types of artificial intelligence—weak AI vs. strong AI, Deep learning vs. machine learning, Introduction to fundamental of NLP, Brief Introduction about Genrative AI, Generative Pre-Trained Transformer and OpenAI , Recommendations System (Social Media Feeds, Amazon, and Netflix Recommendations)
3.	VR 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,

	<p>Aural & Haptic Displays, Applications of Virtual Reality.</p> <p><i>Case Study on the use of Virtual Reality at NASA</i></p> <p>AR</p> <p>What Is Augmented Reality - Defining augmented reality, history of augmented reality. The Relationship Between Augmented Reality and Other Technologies-Media, Technologies, Other Ideas Related to the Spectrum Between Real and Virtual Worlds, applications of augmented reality.</p> <p>Augmented Reality Concepts- How Does Augmented Reality Work? Concepts Related to Augmented Reality, Ingredients of an Augmented Reality Experience</p>
4.	<p>Data Science</p> <p>What is data science? ,The Data Science Life Cycle, Data science versus data scientist, Data science versus business intelligence , Data science tools , Data science and cloud computing , Data science use cases</p> <p><i>Case Study: Amazon uses data science to personalize shopping experiences and improve customer satisfaction</i></p>
<p>Text Books</p> <ol style="list-style-type: none"> 1. Allan Fowler-AR Game Development, 1st Edition, A press Publications, 2018, ISBN 978-1484236178 2. Virtual Reality, Steven M. LaValle, Cambridge University Press, 2016 3.Arduino Cookbook, Michael Margolis, O'Reilly 4. ARTIFICIAL INTELLIGENCE: A MODERN APPROACH, 4TH EDITION by Russell/Norvig (Author) 	
<p>References</p> <ol style="list-style-type: none"> 1. Augmented Reality: Principles & Practice by Schmalstieg / Hollerer, Pearson Education India; First edition (12 October 2016),ISBN-10: 9332578494 2. Sanni Siltanen- Theory and applications of marker-based augmented reality. Julkaisija – Utgivare Publisher. 2012. ISBN 978-951-38-7449 3.Doug A Bowman, Ernest Kuijff, Joseph J LaViola, Jr and Ivan Poupyrev, “3D User Interfaces, Theory and Practice”, Addison Wesley, USA, 2005 4. IBM Data Science : https://www.ibm.com/topics/data-science 5. IBM AI : https://www.ibm.com/topics/ai 	

External Exam Format : As per Table 1.1, 1.2 and 1.3