- Integration, understanding and selection of appropriate data visualization techniques to effectively communicate results
- Identifying ways in which data quality can be compromised and applying remedies
- Evaluation of data from varying sources to create meaningful presentations.
- A survey-based research on epidemiology and public health by collecting real data from the field area. It will include study designing, data collection, visualization and analyses of the data
- The results will be used for the preparation of a project report/manuscript.

Essential/recommended readings

- Introduction to Data Science in Healthcare Reading: https://www.r2library.com/Resource/detail/1584265329/ch0007s0170
- Analytics and (Precision Medicine) Decision Support Reading: https://www.r2library.com/Resource/detail/0128006811/ch0014s0163
- Hype Cycle for Healthcare Providers, 2019 (Gartner) Reading: Pages 3-7
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- https://www.r2library.com/Resource/detail/0340950056/ch0004s0092
- Principal components analysis https://www.r2library.com/resource/detail/0803625642/ch0006s0141 ANOVAhttps://www.r2library.com/Resource/detail/0781781531/ch0015s0490

DISCIPLINE SPECIFIC ELECTIVE COURSE -3 (DSE-3)
V. 5.2. Game Development using UNITY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Game Development using UNITY#, DSE 3, V. 5.2	**4**	**0**	**0**	**4**	**Class XII pass with Mathematics**	**C^{++}**

 # This course will also be available to the students in semester III

Learning Objectives

The Learning Objectives of this course are

- to introduce the students to the game engine platform UNITY
- to give a basic on how to develop a game using this game engine.
- to design, develop and finalize a game on either an Android or an IOS platform

Learning outcomes

This course gives students an insight into developing a game either on a mobile or a desktop platform. Upon completion of the course the students would be able to-

- Possess basic ability to convert game idea into a working prototype
- Learn basic techniques for animation and simulation
- Extend the concept of game development on Web, console or VR platforms
- Develop a creative and aesthetic mindset by creating a good looking functional UI for the developed game

Practicals - **(120 Hours)**

The course will be conducted completely on a hands- on mode. The basic concepts will be explained and each concept will be augmented by small tasks initially on UNITY before designing and developing a game. The following tasks will be performed in lab:

- Introduction to Unity's Interface and Unity's Basics
- Rigid Bodies and Colliders
- Audio Source and UI Elements
- Moving Character with Code
- Introduction to Variables; Operations with Variables; Functions; Conditional Statements; Loops; Coroutines; Classes
- Creating animations, simulations and background
- Designing, developing and finalizing a game

Essential/recommended readings

- *Learning C# by Developing Games with Unity 5.x*, G. Lukosek, Packt publishing Ltd, 2016
- *Developing 2D Games with Unity: Independent Game Programming with C#*, Jared Halpern, Apress, 1st Edition, 2018
- *Unity in Action: Multiplatform Game Development in C# with Unity 5*, Joe Hocking, Manning publications, 3rd Edition, 2022
- *Unity From Zero to Proficiency (Foundations)*, Patrick Felicia, LPF publishing, 4th Edition, 2015

DISCIPLINE SPECIFIC ELECTIVE COURSE -3 (DSE-3)
V. 5.3. 3D printing using Blender

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		