Semester V

DISCIPLINE SPECIFIC ELECTIVE COURSE -3 (DSE-3)
V.5.1 Health Data Analysis

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		
Health Data Analysis[#] DSE-3, V.5.1	**4**	**0**	**0**	**4**	**12th Pass**	**NIL**

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

Learning Objectives

This is a practical based module is designed to:

- Introduce students to the complexity of data related to health and diseases.
- Introduce to the students the method of collection of data, their visualization and analysis

Learning outcomes

After studying this course, the students will be able to:

- Comprehend and handle complex data related to health and diseases, which are usually large.
- Do survey-based research for data collection, their visualization by different methods and their analysis including the statistical analysis

Syllabus

Practicals - (120 Hours)

- Art and Science of preparation of questionnaire for collection of health data: types and ethical consideration
- Types of data: Likert scale data and quantitative data related to health and diseases their collection methods
- Understanding how data is organized to facilitate analysis in the healthcare setting.
- Data visualization through histograms and tables
- Data visualization through heat maps

- 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