20MC6107A - INNOVATION, IPR AND ENTREPRENEURSHIP

Course Category:	Mandatory Course	**Credits:**	0
Course Type:	Theory	**Lecture - Tutorial - Practice:**	2-0-0
Prerequisites:	--	**Continuous Evaluation:**	100
		Semester end Evaluation:	
		Total Marks:	100

	Upon successful completion of the course, the student will have:	
	CO1	Learn the innovation concepts related to business organizations.
	CO2	Understand the importance of innovation in new start-ups.
	CO3	Know fundamental aspects of Intellectual property Rights.
	CO4	Learn the basic concepts of entrepreneurship and its benefits.

Contribution of Course Outcomes towards achievement of Program Outcomes (1-Low, 2- Medium, 3-High)

CO	PO												PSO		BTL	PI
	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
CO1		1						2	2		2				2	
CO2		2						1	2		2				2	
CO3		2						2	3		3				2	
CO4		1						3	2		2				2	

Course Content

UNIT – I Innovation Management: Introduction

Innovation: Definition, Importance – The need to view innovation in an organizational context – Different types of innovation - Innovation and Invention – Popular views of innovation – Innovation as a management process.

UNIT – II Innovation: New Product Development (NPD)

Innovation Management and New Product Development – Considerations when developing as NPD strategy - NPD as a strategy for growth – What is new product? – Classification of new products – NPD as an industry innovation cycle.

UNIT – III – Intellectual Property Rights (IPR)

Introduction and the need for intellectual property right (IPR) - Kinds of Intellectual Property Rights: Patent, Copyright, Trade Mark, Design, Geographical Indication, Plant Varieties and Layout Design – Genetic Resources and Traditional Knowledge – Trade Secret - IPR in India : Genesis and development.

UNIT – IV - Entrepreneurship

Concept and need of entrepreneurship - Characteristics and Types of Entrepreneurship - Entrepreneurship as a career - Entrepreneurship as a style of Management - The changing role of the entrepreneur - Entrepreneurial traits, factors affecting entrepreneurs.

Text Books	[1] Paul Trott, Innovation Management and New Product Development, Pearson Education Limited, UK, 2017. [2] Nithyananda, K V., Intellectual Property Rights: Protection and Management, Cengage Learning India Private Limited, 2019. [3] Dr.S S Khanka, Entrepreneurial Development, S Chand, New Delhi, 2020.
Reference Books	[1] Managing innovation: Integrating Technological, Market and Organizational Change, Joe Tidd, John Besant, 2018. [2] Neeraj, P., &Khusdeep, D, Intellectual Property Rights. PHI learning Private Limited, India, 2019. [3] Vasant Desai, The Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House, India, 2022.
E-resources and other digital material	https://edisciplinas.usp.br/pluginfile.php/5553082/mod_folder/content/0/Trott%20-%202017%20-%20%20roz%20Innovation-Management-and-New-Product-Development.pdf?forcedownload=1

DEPARTMENT OF INFORMATION TECHNOLOGY

HONORS DEGREE

SCHEME OF INSTRUCTIONS & SYLLABUS

VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE

DEPARTMENT OF INFORMATION TECHNOLOGY

HONOR DEGREE IN INFORMATION TECHNOLGY

COURSES OFFERED UNDER HONOR DEGREE IN IT

COMMENCING FROM ACADEMIC YEAR 2021-2022

TRACK 1: AI & DATA SCIENCE

S.No	Course code	Course Name	Offered in Semester	L	T	P	Credits
1	20ITH48A01	Data Analytics	**IV**	4	0	0	4
2	20ITH58A02	Web and Text Mining	**V**	4	0	0	4
3	20ITH68A03	Social Network Anal;ysis	**VI**	4	0	0	4
4	20ITH78A04	Health Analytics	**VII**	4	0	0	4
(MOOCs - Self Learning)							
5	20ITH58A11	Advanced Data Science	**V**	-	-	-	2
6	20ITH78A12	Machine Learning Engineering for Production	**VII**	-	-	-	2

20ITH48A01–DATA ANALYTICS

Course Category:	Honors	**Credits:**	4
Course Type:	Theory	**Lecture-Tutorial-Practice:**	4-0-0
Prerequisites:		**Continuous Evaluation:**	30
		Semester end Evaluation:	70
		Total Marks:	100

Course Outcomes	Upon successful completion of the course, the student will be able to:	
	CO1	Understand the basics and Life cycle of Data Analytics
	CO2	Apply probability and Sampling distributions for data modeling.
	CO3	Develop forecasting and Monte Carlo simulation models
	CO4	Solve linear optimization and Decision problems

Contribution of Course Outcomes towards achievement of Program Outcomes (1-Low, 2- Medium, 3-High)

CO	PO												PSO		BTL	PI
	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
CO1	1	1											1		2	1.5.1, 2.1.2
CO2	2	2		1									1	1	3	1.5.1, 2.2.4, 4.1.2
CO3	1	2		1									2	1	3	1.5.1, 2.2.4, 4.1.2
CO4	2	2		2									2	1	3	1.5.1, 2.2.4, 4.1.2

Course Content

UNIT I:

Introduction to Data Analytics

Introduction to Big Data Analytics: Big Data Overview, Data Structures,Analyst perspective on Data Repositories,State of the PracticeinAnalytics, Current AnalyticalArchitecture, Emerging Big Data ecosystemandaNewApproach toAnalytics

Data Analytic Life Cycle: Overview, phase 1- Discovery, Phase 2- Data preparation, Phase 3- Model Planning, Phase 4- Model Building, Phase 5- Communicate Results, Phase 6- Operationalize

UNIT II:

Descriptive Analytics

Probability Distributions and Data Modeling: Basic concepts of probability, Random variables and probability distribution, Discrete Probability Distributions, Continuous Probability Distributions.

Sampling and Estimation: Statistical Sampling, Estimating Population parameters, Sampling Error, Sampling Distributions, Interval Estimates, Confidence Intervals, Using confidence intervals for decision making, Prediction intervals, Confidence intervals and sample size

UNIT III:

Predictive Analytics

Forecasting Techniques: Qualitative and Judgmental Forecasting, Statistical Forecasting Models, Forecasting Models for Stationary Time Series, Forecasting Models for Time Series with a Linear Trend, Forecasting Time Series with Seasonality,