5. INFORMATICS

Discipline	COMPUTER SCIENCE				
Course Code	UK1DSCCSC104				
Course Title	INFORMATICS				
Type of Course	**DSC**				
Semester	I				
Academic Level	1				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4 hours
Pre-requisites	Nil				
Course Summary	This course serves as an introduction to the field of informatics, covering foundational concepts, theories, and practical applications. Students will explore various aspects of informatics and their societal impact. The course will also emphasise critical thinking and problem-solving skills essential in the field.				

Detailed Syllabus:

Module	Unit	Content	Hrs (L)
I	**Introduction to Informatics**		**12**
	1	Number Systems,- ASCII, BCD, EBCDIC,Binary, Octal, Hexadecimal, Basic Conversions, colour formats- RGB,CMYK, hue,saturation, Latest display devices.	
	2	Network devices- Repeater, Hub, Switch, Modem, Router, Bridge, Gateway.	
	3	Email System- SMTP, POP, MIME	
	4	Mobile Systems- generations- 1G, 2G, 3G, 4G, 5G, GSM	
II	**Knowledge skills for Higher Education**		**12**

	5	Data information and Knowledge, Internet and Academic search techniques, Search engines	
	6	Creating your cyber presence, Podcasts, Weblogs and Videologs, Webcasts, E-mail.	
	7	Social Informatics: IT and society, issues and concerns, Digital divide, IT and development : new opportunities	
	8	Cyber ethics, cyber crime, cyber threats, cyber security, cyber laws, cyber addictions, Social cybernetics.	
III	**Softwares/Tools for Informatics**		**12**
	9	Geoinformatics, Components of Geoinformatics, Evolution of Geoinformatics as a Multidisciplinary Discipline, Applications, Geoinformatics Products.	
	10	Case study: ArcGIS/ QGIS (Quantum GIS)	
	11	Bioinformatics: Introduction **to** Bioinformatics**,** Definition and scope of bioinformatics, Importance of bioinformatics in biological research	
	12	History of Bioinformatics : Biological Databases and Data Retrieval, Overview of major sequence biological databases (e.g., GenBank, UniProt, NCBI)	
IV	**Digital Marketing/ Artificial Intelligence tools for Business**		**12**
	14	Website creation, Image generator	
	15	Generative AI, AI prompt generator	
	16	Audio/Video Generator, Social Media Advertisements Generator.	
V	**Flexi Module:Not included for End Semester Exams**		**12**
	17	Canva, Gemini	
	18	Wordpress, facebook	
	19	bing.com, chatGPT	

Core References:

1. Alexis Leon, Mathews Leon, Leon Vikas, “Fundamentals Of Information Technology” , Tata McGraw Hill Education, Second Edition, 2009.
2. Informatics and Cyber Ethics : Dr Antony Thomas, Pratibha Publications.

3. Vijayakumaran Nair, Vinod Chandra S S, Informatics, PHI, 2014
4. V.RajaramanIntroduction to Information Technology,, PHI, Third Edition, 2018
5. Pradeep K. Sinha, Priti SinhaInformation Technology,, PHI, 2017
6. Principles and Theory of Geoinformatics, P.K. Garg, Khanna Books, Edition: 1, 2019.

Web site references:

1. https://www.wscubetech.com/blog/ai-tools-for-digital-marketing/

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Explain the basics of computers	U	PSO-1
CO-2	Identify the skills for higher education	U	PSO-1
CO-3	Apply Softwares/Tools for Informatics	Ap	PSO-1, 3
CO-4	Use different Digital Marketing/ Artificial Intelligence tools for Business	Ap	PSO-1,2

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: INFORMATICS

Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO1	Explain the basics of computers	PO- 6, 7 PSO-1	U	F,C	L	-
CO2	Identify the skills for higher education	PO- 3, 6, 7, 8 PSO-1	U	F,C	L	-

CO3	Apply Softwares/Tools for Informatics	PO- 4, 5, 6,7 PSO-1, 3	Ap	F,C,P	L	-
CO4	Use different Digital Marketing/ Artificial Intelligence tools for Business	PO- 5, 6,7 PSO-1, 2	Ap	F,C,P	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PO 1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
CO 1	-	-	-	-	-	2	1	-	1	-	-	-
CO 2	-	-	-	-	-	2	1	3	2	-	-	-
CO 3	-	-	-	1	2	2	3	-	2	-	1	-
CO 4	-	-	2	-	1	2	3	-	2	1	-	-

Correlation Levels:

Level	**Correlation**
-	Nil
1	Slightly / Low