MAHATMA GANDHI UNIVERSITY
Kottayam, Kerala

Undergraduate Programmes (HONOURS)
2024 Admission Onwards

SYLLABUS	
SIGNATURE COURSE	
Name of the College	Al- Ameen College, Edathala
Faculty/ Discipline	Computer Science
Programme	BSc (Hons) Computer Science
Course Coordinator	Zaina MH
Contributors	Dr. Jyothy Joseph
Course Name	Digital Technologies And Emerging Trends In Computing
Type of Course	VAC
Specialization title	This Signature Course does not have a specialization.
Course Code	MG3VACCSCA00
Course Level	200
Course Summary	This course introduces students to key components of India's digital transformation, including Digital India initiatives, digital financial tools, and fundamental emerging technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), and Cloud Computing. Students will explore applications, technical components, and real-world implementations to build awareness and foundational skills in digital literacy and technology trends.

Semester	3	**Credits**			3	**Total Hours**
Course Details	**Learning Approach**	Lecture	Tutorial	Practical	Others	
		3	0	0	0	45

Pre-requisites, if any	

Course Outcomes (CO)

Number of COs			**4**	
CO No.	**Expected Course Outcome**		**Learning Domains ***	**PO No**
1	Understand the scope and objectives of Digital transformation and apply knowledge of Digital trends in societal, educational, and industry.		U	PO2, PO6
2	Understand concepts and applications of emerging technologies in various domains and identifying key principles of cyber security and digital ethics, emphasizing responsible digital behavior and cyber threat awareness		U	PO6, PO8
3	Understand the basics of career trends focus on their application across industries.		U	PO1, PO10
4	Analyze entrepreneurial opportunities and challenges in the digital age, fostering an innovative mindset toward digital enterprise development		AN	PO1, PO10

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

CO-PO Articulation Matrix

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	-	2	-	-	-	2	-	-	-	-
CO 2	-	-	-	-	-	1	-	3	-	-
CO 3	2	-	-	-	-	-	-	-	-	2
CO 4	2	-	-	-	-	-	-	-	-	1

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

Course Content

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1		Foundations of Digital Transformation		
	1.1	Introduction to digital transformation - Definition and evolution of digital transformation, Impact of digital technologies on society, businesses, and education. Applications of digital transformations in different areas (Education, Governance, Finance etc.)	7	["1"]
	1.2	Digital Trends – Basic concepts and applications of AI and machine Learning (Healthcare, Finance, Education, etc.), IoT- Definition, scope and significance of IoT, Cloud Computing – Basic Concepts, Types ,Architecture and its applications.	8	["1"]
2		Emerging Technologies		
	2.1	Introducing the concepts of Augmented Reality (AR) and Virtual Reality (VR), and its applications in gaming, education and healthcare.	7	["2"]
	2.2	Fundamentals of Cyber security and Digital Ethics – Introduction to cyber security and digital responsibility, awareness on cyber threat and digital ethics.	8	["2"]
3		Future Technologies and Career Trends		
	3.1	Robotics and Automation – Basics concepts, types and applications (Healthcare and Medical Robotics, Defense and Military, Education and Research etc.) Automation technology (RPA- Robotic Process automation, AI-powered Bot	10	["3"]
	3.2	Enterpreunseship in digital Age – Opportunities and Challenges	5	["4"]

Teaching and Learning Approach	Classroom Procedure (Mode of transaction) Lecture, Demonstration through ICT tools

Assessment Types	**MODE OF ASSESSMENT** Mode of Assessment: Theory **A. Continuous Comprehensive Assessment (CCA)** **• Theory – 25 Marks** 1. Written test 2. Assignment **B. End Semester Evaluation (ESE)** **• Theory – 50 Marks** Assessment Methods – Written Test Duration of Examination – 1.50 Hrs Pattern of examination for Theory – Non-MCQ Different parts of written examination – Part - A , B , C Answer Type: ∘ PART - A ∘ One or two Sentences - (10 out of 10) – 10 × 1 = 10 ∘ PART - B ∘ Short answer - (4 out of 6) – 4 × 5 = 20 ∘ PART - C ∘ Essays - (2 out of 3) – 2 × 10 = 20

References

- 1. Digital India: Technology to Transform a Connected Nation ,Ravi Ramamurti & Nitin Nohria . 2. Internet of Things: A Hands-On Approach, Arshdeep Bahga & Vijay Madisetti 3. Artificial Intelligence: A Modern Approach, Stuart Russell & Peter Norvig 4. Cloud Computing: Insights into New-Era Infrastructure, Kumar Saurabh 5. Cloud Computing: Concepts, Technology & Architecture" by Thomas Erl, Ricardo Puttini, and Zaigham Mahmood 6. Thomas Siebel, Digital Transformation: Survive and Thrive in an Era of Mass Extinction, Rosetta Books, ISBN: 978-1948122481.

Suggested Readings

- 1. Cloud Computing: A Practical Approach, Anthony Velte et al. 2. AWS, Microsoft Azure, Google Cloud, IBM AI, and other official documentation portals 3. Daniel Drescher, Blockchain Basics: A Non-Technical Introduction in 25 Steps, Apress, ISBN: 978-1484226032. 4. Melanie Mitchell, Artificial Intelligence: A Guide for Thinking Humans, Penguin, ISBN: 978- 0141986807. 5. Klaus Schwab, The Fourth Industrial Revolution, Crown Business, ISBN: 978-1524758868. 6. P.W. Singer and Allan Friedman, Cyber security and Cyberwar: What Everyone Needs to Know, Oxford University Press, ISBN: 978-0199918096.

Affidavit

- We, Al- Ameen College, Edathala and Zaina MH, agree to permit the use of our proposed course syllabus by other faculty members within the same discipline for course delivery at their respective institutions.

- We, Al- Ameen College, Edathala, agree to appoint a new course coordinator for the proposed Digital Technologies And Emerging Trends In Computing in the event of the unavailability of the currently nominated coordinator. This appointment will ensure the continued coordination of course delivery, assessments, and all related academic responsibilities necessary for the successful implementation of the signature course, for as long as the college offers this programme.

- We, Al- Ameen College, Edathala and Zaina MH, declare that no part of this signature course submitted here for approval has been taken from the course content developed by, or from any of the course titles prepared by, the BoS/expert committee in the same discipline under our University.