Mahatma Gandhi University
Kottayam

Programme	**Bachelor in Business Administration (Honours)**					
Course Name	**Emerging Technologies and Applications**					
Type of Course	**Skill Enhancement Course (SEC)**					
Course Code	MG2SECBBA100					
Course Level	**NA**					
Course Summary	To provide a comprehensive understanding of emerging technologies such as block chain, IoT, cloud computing, robotics, etc. and to develop the skill to handle data in Microsoft Excel.					
Semester	2	Credits			2	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	45
		15		30		
Pre-requisites						

COURSE OUTCOMES (CO)

CONo.	Expected Course Outcome	Learning Domains *	Annual PO No	MGU PO
CO1	Understand foundational knowledge of emerging technologies such as blockchain, IoT, cloud computing and Industry 4.0	U	1	1
CO2	Develop basic skills to handle data in Microsoft Excel	S	4	2
Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)				

COURSE CONTENT

Content for Classroom transactions (Units)

Module	Course description	Hrs	CO No.
1: Introduction to emerging technology		**15 Hrs**	
1.1	**Introduction to Cloud Computing:** Meaning and Definition, the evolution from traditional IT infrastructure to cloud computing, Key features; Components of Cloud Computing (Hardware, software, networks, and virtualisation & Public, Private, and Hybrid Clouds); Importance in the Business World; challenges of adopting cloud technologies; Understand various cloud service models (IaaS, PaaS, SaaS) (concept only); key players in the cloud industry and their offerings	5	CO1
1.2	Industry 4.0: Meaning, Core Technologies of Industry 4.0, Benefits and challenges; IoT: Meaning, Components of IoT Systems, IoT in Various Industries and businesses, Benefits and challenges.	5	CO1
1.3	Block chain Technology: Fundamentals of Block chain- Financial services and digital identity – Challenges and Opportunities – Security and privacy issues – Regulatory and compliance considerations	5	CO1
2. Introduction to Microsoft Excel			**30 hrs**

2.1	Understanding key Concepts: Spreadsheet, Areas in a spreadsheet (Ribbon, Tabs, Quick Access, Name bar, Formula Bar, Toolbar), Workbook, Worksheet, Cells, Rows, Columns; Basic Operations: Creating a new worksheet, Renaming, Inserting, and Deleting Worksheets; Opening, saving, closing and printing workbooks; Cell selection and navigation; Modifying spreadsheet: cut, copy, paste data; changing row height and column width, adding, deleting and hiding/unhiding rows and columns, merge or split cells, wrap cell; Formatting: format numbers, cell borders, font, size, colour, alignment, orientation, indentation, using format painter; format table; Undo, Redo, Basic excel shortcuts keys; Conditional Formatting	7	CO2
2.2	**Data Management and Organization in excel:** Sorting and Filtering Data (Basic only); Data Validation (Creating drop-down lists); Ensuring data consistency by restricting data types (e.g., numbers only); Using Freeze Panes	6	CO2
2.3	**Working with basic mathematical operators, Excel Functions and Formulas** Cell referencing: Absolute, relative and mixed referencing; Working with mathematical operators in Excel: Addition, subtraction, multiplication, and division; Sums using mathematical order of operations; Excel functions: *Arithmetic Functions* (Sum, Average, Max, Min, Fact, Count, Countif; Round; Sqrt; Power, Log); *Statistical Functions* (Average; Standard deviation; Mode; Median, Range), *Logical Functions* (IF, AND, OR, NESTED IF, IF AND, IF OR)	10	CO2
2.4	**Data Visualization in Excel** Creating Charts and Graphs: different types of charts and graph in excel; Create column charts (Clustered Column, Stacked Column, 100% Stacked Column), Bar Charts (Clustered Bar, Stacked Bar, 100% Stacked Bar), Pie Charts (Simple, 3D, Doughnut pie), Simple line graph Basic Chart Formatting: Selecting the Chart, Changing	7	CO2

	the Chart Type; Adding and formatting Chart elements: Chart Title, Axis, Axis Titles, legends, gridlines, data labels, chart style, colour; Modifying Axis Scale.		

References

Text Books (Latest Editions):

1. Emerging Technologies by Errol S. van Engelen
2. Internet of Things by Jeeva Jose, Khanna Book Publishing.
3. Digital Transformation: A Strategic Approach to Leveraging Emerging Technologies, Anup Maheshwari
4. Virtual & Augmented Reality by Rajiv Chopra, Khanna Book Publishing.
5. Emerging Technologies for Effective Management by Rahul Dubey, Cengage Publications.
6. IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things by David Hanes, Jerome Henry, Rob Barton, Gonzalo Salgueiro and Patrick Grossetete.
7. Blockchain for Business by Jai Singh Arun, Jerry Cuomo and Nitin Gaur.
8. Block Chain & Crypto Currencies by Anshul Kausik, Khanna Book Publishing.
9. Industry 4.0 Technologies for Business Excellence: Frameworks, Practices, and Applications by Edited by Shivani Bali, Sugandha Aggarwal, Sunil Sharma.
10. Blockchain, Artificial Intelligence, and the Internet of Things: Possibilities and Opportunities" by Pethuru Raj, Ashutosh Kumar Dubey, Abhishek Kumar, Pramod Singh Rathore.
11. https://www.scribd.com/document/671869762/Microsoft-Excel-Book-2022
12. https://mcrhrdi.gov.in/group12019/Reading%20Material/IT/Adv.Excel%20-%20Handbook(7-6-17).pdf

ASSESSMENT

Continuous Comprehensive Assessment (CCA) - Maximum Marks: 15

SL. NO	Component	Activity	Max. Marks
1	Quiz/Exams/MCQ		10
2	Lab involvement and subject knowledge		5
	Total Marks		**15**

End Semester Evaluation (ESE) - Maximum Marks: 35

Sl. NO	Component	Activity	Max. Marks
2	Practical Examination 1.5 hours	Two practical questions from (module 2) 2 questions of 15 marks	2*15=30
		5 marks for viva (module 1)	5 marks for viva
Total Marks			**35**