MARIAN COLLEGE KUTTIKKANAM

AUTONOMOUS

MAKING COMPLETE

Scheme and Syllabus of

Certificate Courses

2023 Admissions

Affiliated to Mahatma Gandhi University Kottayam
Marian College Kuttikkanam Autonomous
Kuttikkanam P.O, Peermade
Idukki District, Kerala, India - 685531
E-mail: mariancollege@mariancollege.org
https://www.mariancollege.org

Table of Contents

Members of Board of Studies, Department of Computer Applications (PG), Marian College Kuttikkanam Autonomous

Sl. No	Category of Selection	Name & Designation
01	Chairman	Dr Mendus Jacob, +91 9447053716, mcadirector@mariancollege.org
02	Subject Experts	Dr Sherimon P.C., Faculty, Computer Studies, Arab Open University [AOU], Oman
03	Subject Experts	Dr K.C. Chandrasekharan Nair, Founder Member & CFO, Technopark, Kerala. (Retd), Founder Managing Director; Registrar, Technopark TBI (KSUM) (Retd.)
04	Representative from Industry	Mr Mathew Joseph, Vice President & Head of Artificial Intelligence Labs, Apar Technologies Pvt. Ltd.
05	Meritorious Alumnus	Ms Rose Mary Kurian, System Consultant at Timken Engineering and Research, Bangalore
06	Special Invitee	Mr Anil V. Kuriakose, Founder & CEO, Algomox Private Limited, Bangalore
07	Special Invitee	Mr Manoj K. Cyriac, Chief Executive Officer, Affecto Consulting, Bangalore
08	Faculty Member	Mr Win Mathew John, Associate Professor, +91 9447 573 105, win.mathew@mariancollege.org
09	Faculty Member	Mr Robins Antony Kattoor, Associate Professor, robins.kattor@mariancollege.org
10	Faculty Member	Dr Brijesh George John, Associate Professor, brijesh.george@mariancollege.org
11	Faculty Member	Ms Reny Jose, Assistant Professor, reny.jose@mariancollege.org
12	Faculty Member	Mr Satheesh Kumar S, Assistant Professor, satheesh.kumar@mariancollege.org
13	Faculty Member	Ms Kochumol Abraham, Assistant Professor, kochumol.abraham@mariancollege.org
14	Faculty Member	Sr Italia Joseph Maria, Assistant Professor, sr.regina@mariancollege.org
15	Special Invitee	Dr Sabu Augustine, Principal, JPM Arts and Science College, Kattapana
16	Faculty Member	Dr Sunil Job, Visiting Faculty, PG Department of Computer Applications
17	Nominee of the Vice Chancellor	Dr Sasikumaran S, CEO, METTSS, Trivandrum (Former Professor and Founder Chairman of the Department of Computer Engineering of King Khalid University, Saudi Arabia), Mob: 953917435, Email: drsasikumaran@gmail.com

MARIAN COLLEGE KUTTIKKANAM AUTONOMUS

REGULATIONS GOVERNING CERTIFICATE COURSES OF DEPARMENT OF COMPUTER APPLICATIONS (PG) UNDER THE CREDIT SYSTEM 2023

1. SHORT TITLE

1.1 These Regulations shall be called Marian College Kuttikkanam (Autonomous) Regulations of Certificate Course / Certificate Programme / Diploma / P G Diploma in <Title> under the Credit System 2023.

2. SCOPE

2.1 The regulation provided herein shall apply to Certificate Course / Certificate Programme / Diploma / P G Diploma in <Title>, conducted by Marian College Kuttikkanam Autonomous with effect from 2023. admissions.

3. TITLE OF THE PROGRAMME

3.1 The title of the programme is Certificate Course / Certificate Programme / Diploma / P G Diploma in <Title>.

4. PROGRAMME STRUCTURE

4.1 Students shall be admitted to the Certificate Course / Certificate Programme / Diploma / P G Diploma in <Title> under the faculty of <Programme Name>.

4.2 **Duration of the Programme**: The Certificate Course is a <Course duration in hours>.

4.3 The medium of instruction and examination shall be English.

5. REGISTRATION

5.1 A student shall be permitted to have single entry or multiple entry based on the nature of the course / programme (Online/Offline/Blended).

5.2 A student shall be able to join for a course or programme based on the schedule published by the board of studies, it can be specified by the date of commencement or time schedule of each course

5.3 A student who has registered for the programme shall complete the course within a maximum period of six months / 1 year from the date of commencement of the course / programme.

6. ELIGIBILITY FOR ADMISSION

6.1 The admission to the Certificate Course / Certificate Programme / Diploma / P G Diploma shall be as per the rules and regulations of the College.

6.2 The eligibility criteria for admission shall be as announced by the College from time to time and published in the Prospectus / Website of the college

6.3 A candidate seeking admission to Certificate Course / Certificate Programme / Diploma must have a pass in any recognized 10+2 programme and P G Diploma must have a pass in

a programme at Graduate level.

7. EXAMINATION, EVALUATION AND GRADING

7.1 The department shall ensure that the college examination calendar shall be strictly followed.
  - Evaluation: The evaluation is conducted as (a) Continuous Assessment (CA) consisting of Activity Oriented Assessments and (b) Semester End Assessment (SEA) consisting of Internship, Field practicum, Projects etc.

7.2 CA and SEA shall be in direct grading.

7.3 The total credit of the Certificate Course / Certificate Programme / Diploma / P G Diploma shall be 2 – 20 / 36 – 40 / 72 – 80/ 36 - 40 (Refer page no: 13 of "Guidelines for Multiple Entry and Exit in Academic Programmes offered in Higher Education Institutions", July 2021)

7.4 Direct grading for CA shall be based on six letter grades (A+, A, B, C, D and E) with numerical values 5, 4, 3, 2, 1 and 0 respectively

7.5 Grade Point Average (GPA): CA and SEA components are separately graded and the combined grade point with weightage 2 for CA and 3 for SEA shall be applied to calculate the GPA of each course. Letter grade shall be assigned to each course based on the categorization provided below.

Grade	Grade Point	Range
A+	5	4.50 to 5.00
A	4	4.00 to 4.49
B	3	3.00 to 3.99
C	2	2.00 to 2.99
D	1	0.01 to 1.99
E	0	0.00

7.6 **Continuous Assessment (CA):** The CA shall be based on a predetermined transparent system involving periodic tests and lab skills.

7.7 To ensure transparency of the evaluation process, students can view the grades of each component of CA in the student portal (mcka).

7.8 A minimum of **C Grade** is required for a pass of the course. If a candidate fails, they will get a chance to repeat the course within SIX months.

7.9 **Semester End Assessment (SEA):** There shall be Semester End Assessment, if required.

8. AWARD OF CERIFICATE

8.1 The successful completion with a minimum of **'C' grade** shall be the requirement for an award of the certificate by Marian College Kuttikkanam (Autonomous), Kerala.

Programme Outcome:

Programme Outcomes (PO) are what knowledge, skills and attitudes a graduate should have at the time of graduation. The following are the Programme Outcomes of Marian College, Kuttikkanam (Autonomous)

1. Domain Knowledge

2. Communicative competence

3. Proficiency in using Modern technologies

4. Reflective response to ethical and social issues

5. Sustainability values

6. Critical thinking and Problem Solving

7. Entrepreneurship and Leadership

8. Teamwork and Leadership

9. Self-directed and Lifelong Learning

Programme Specific Outcome:

Programme Specific Outcomes (PSO) are statements that describe what the graduates of a specific Programme should be able to do

PSO1: Ability to incorporate standard practices and technological advancements in the software development life cycle

PSO2: Expertise in providing optimized algorithmic solutions

PSO3: Expertise in recent technologies like SMAC (Social, Mobile, Analytics and Cloud), Machine Learning and IOT

PSO4: Demonstrate skills in ideation, innovation and commercialization of IT products and service

MCD2301: Certificate Course in Linux System Administration

Total Instructional Hours: Theory: 50 Hrs. Lab: 50 Hrs.   **Credit: 4**

Course Outcomes:

The student should be able to:

CO1: Use essential tools
CO2: Manage basic networking, security, containers, users and groups
CO3: Deploy, configure and maintain systems
CO4: Configure local storage
CO5: Configure file systems

Module 1: Access the command line, manage files from the command line, get help in Enterprise Linux, Create, view, and edit text files, manage local users and groups, Control access to files, Monitor and manage Linux processes, Control services and daemons

(12 hours)

Module 2: Configure and secure SSH, Analyze and store logs, manage networking, Archive and transfer files, Install and update software packages   **(10 hours**)

Module 3: Access Linux files systems, analyze servers and get support, improve command line productivity, Schedule future tasks   **(10 hours)**

Module 4: Tune system performance, Manage SE Linux security, Manage logical volumes, Access network-attached storage   **(10 hours)**

Module 5: Control the boot process, manage network security, Install Red Hat Enterprise Linux, Run Containers   **(08 hours)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	Continuous tests and lab skills	4
2	Practical Exam	4
3	Viva	2
4		
5		
	Total	**10**

MCD2302: Certificate Course in Enterprise Linux Automation with Ansible

Total Instructional Hours: Theory: 50 Hrs. Lab: 40 Hrs.   **Credit: 4**

Course Outcomes:

The student should be able to:

CO1:	Installing Red Hat Ansible Automation Platform on control nodes.
CO2:	Demonstrate ability in creating and updating inventories of managed hosts and managing connections to them
CO3:	Use ansible Playbooks and ad hoc commands for automating and administration task
CO4:	Demonstrate ability in protecting sensitive data used by Ansible Automation Platform with Ansible Vault
CO5:	Reusing code and simplifying playbook development with Ansible Roles and Ansible Content Collections

Module 1: Introduce Ansible, Implement an Ansible playbook   **(12 hours)**

Module 2: Manage variables and facts, Implement task control   **(10 hours)**

Module 3: Deploy files to managed hosts, Manage complex plays and playbooks

    (10 hours)

Module 4: Simplify playbooks with roles, Troubleshoot Ansible   **(10 hours)**

Module 5: Automate common Linux system administration tasks with Ansible.

    (8 hours)

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	Continuous tests and lab skills	4
2	Practical Exam	4
3	Viva	2
4		
5		
	Total	**10**

MCD2303–Certificate Course in Containers and Kubernetes

Total Instructional Hours: Theory: 40. Lab: 45   **Credit: 4**

Course Outcomes:

The student should be able to:

CO1: Create containerized services using Podman
CO2: Manage containers and container images.
CO3: Create custom container images
CO4 Deploy containerized applications on OpenShift
CO5: Deploy multi-container applications

Module 1: Describe how software can run in containers orchestrated by Red Hat OpenShift Container Platform.   **(8 hours)**

Module 2: Creating containerized services, Managing containers   **(8 hours)**

Module 3: Managing container images, Creating custom container images   **(8 hours)**

Module 4: Deploy single container applications on OpenShift Container Platform.   **(8 hours)**

Module 5: Deploy applications that are containerized using multiple container images, Troubleshooting containerized applications   **(8 hours)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	Continuous Assessments	4
2	Practical Exam	4
3	Viva	2
4		
5		
	Total	**10**

MCD2304: Certificate Course in AWS Solution Architect - Associate

Total Instructional Hours: Theory: 50 Hrs. Lab: 50 Hrs. **Credit: 4**

Course Outcomes:

The student should be able to:

CO1:	Implement Identity Access Management (IAM) for security and managing access to various resources in AWS.
CO2:	Configure EC2 Instances and implementation of auto scaling for instances. Deploy, Manage and Scale applications using container orchestration service.
CO3:	Demonstrate ability in storing files securely using the Object Storage method in S3. Build Database Engines and Secure Servers and Services.
CO4:	Implement VPC and its components. Distributing traffic using Load Balancers. Configuring VPN to establish secure connections to on-premise networks.
CO5:	Monitor and backup other services and Account activities.

Module 1: Implementation of Identity Access Management (IAM) for security and managing access to various resources in AWS. Creating IAM user, groups, roles and policies **(12 hours)**

Module 2: Configure EC2 Instances and implementation of auto scaling for instances. Deploy, Manage and Scale applications using container orchestration service. Speed up hosted websites using Content Delivery Network. Building decoupled applications using SNS, SQS. Understanding Serverless computing services. **(10 hours)**

Module 3: Storing files securely using the Object Storage method using S3. Share Storage Disks among Servers via Network. Setup Database Engines and Secure Servers and Services. Implementation of Data Migrations and Data Transfer tools. **(10 hours)**

Module 4: Implementation of VPC and its components. Distributing traffic using Load Balancers. Configure DNS using Route53. Configuring VPN to establish secure connections to on-premise networks. **(10 hours)**

Module 5: Monitor Server Resources using CloudWatch. Creating backup of instances of other services. Auditing AWS environment with CloudTrail. Schedule Event Rules using Target based services **(8 hours)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	Continuous tests and lab skills	4
2	Practical Exam	4
3	Viva	2
4		
5		
	Total	**10**

MCD2305: Certificate Course in Digital Marketing

Total Instructional Hours: Theory: 40 Hrs. Lab: 50 Hrs.   **Credit: 4**

Course Outcomes:

The student should be able to:

CO1:	Develop a business in various social media platforms like Facebook, Instagram, LinkedIn, and YouTube in line with ChatGPT and other AI Tools
CO2:	Demonstrate ability to run Social Media Ads on Platforms like Facebook, Instagram, YouTube and LinkedIn in line with AI Tools
CO3:	Demonstrate ability to connect personally with customers through WhatsApp Business, highlight products and services by providing a catalogue of products, and use special tools to automate, sort, and quickly respond to messages.
CO4:	Ability to use professional platforms like LinkedIn for career and business.
CO5:	Demonstrate the skills to become an influencer, freelance marketer, or YouTuber.

Module 1: Introduction to ChatGPT and Other AI Tools   **(12 hours)**

Module 2: Instagram Marketing, Instagram Ads, Facebook Marketing, Facebook Ads, WhatsApp Business   **(10 hours)**

Module 3: You Tube Marketing, You Tube Ads, LinkedIn Marketing, LinkedIn Ads, Twitter, Pinterest   **(10 hours)**

Module 4: Content Marketing   **(10 hours)**

Module 5: Google Ads, Basic Search Engine Optimization   **(8 hours)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	Continuous assessment tests	4
2	Create any one optimized social media page (Facebook Page/Instagram business/YouTube channel)	1
3	Showcase LinkedIn Profile	1.5
4	Project	2.5
5	Viva	1
	Total	**10**

MCD2306: Certificate Course in Advanced Search Engine Optimization

Total Instructional Hours: Theory: 60 Hrs. Lab: 16 Hrs.   **Credit: 4**

Course Outcomes:

The student should be able to:

CO1:	Use ChatGPT & AI to optimize SEO and outrank competitors on Google.
CO2:	Learn and apply the best Backlink and link-building SEO strategies.
CO3:	Generate high-quality long-tail keywords for websites using ChatGPT and attract the right audience to the websites.
CO4:	Create a website for Blogging or a business and monitor or do the SEO activities.
CO5:	Optimize website content and increase traffic with ChatGPT keyword research techniques.

Module 1: Introduction to Search Engine Optimization (**10 hours)**

Module 2: Technical SEO and On Page SEO (**10 hours**)

Module 3: Off Page SEO and Various Link building Strategies (**10 hours)**

Module 4: Local SEO (**10 hours)**

Module 5: Content Marketing (**10 hours)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	Continuous assessment tests	4
2	WordPress Website Design	0.5
3	Optimized SEO Friendly Website	1.5
4	Execution of Various SEO Ranking Factors	2
5	Viva	2
	Total	**10**

MCD2307 Certificate Course in AI Powered Tools in Higher Education

Total Instructional Hours: 36   **Credit: 2**

Course Outcomes:
The student should be able to:

CO1:	Understand and apply AI tools in higher education.
CO2:	Utilize user-friendly AI tools for research and learning.
CO3:	Practice ethical use of AI tools in education.
CO4:	Evaluate and select AI tools for learning enhancement.

Module 1: Introduction to AI Tools and Their Applications   **(8 hours)**
Overview of AI tools and their significance in higher education, exploring applications in research, learning, and academic support, introduction to user-friendly AI tools for students, prompt engineering, ethical considerations and responsible use, hands-on exercises.

Module 2: AI Tools for Research and Academic Support   **(10 hours)**
AI-powered literature search and citation management tools, AI-driven plagiarism detection and prevention techniques, AI tools for data analysis and visualisation, intelligent tutoring systems, case studies and practical exercises.

Module 3: AI Tools for Learning Enhancement and Personalization   **(8 hours)**
Adaptive learning platforms, AI-driven content creation like graphics and video, intelligent virtual assistants, AI tools for automated grading and feedback, case studies and practical exercises.

Module 4: AI Tools for Career Development and Future Skills   **(10 hours)**
AI tools for career exploration, job searching, resume optimization, AI-driven professional networking platforms, skill assessment tools, ethical considerations, case studies and practical exercises.

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	MCQ Based Quiz	3
2	Assignments	5
3	Viva Voce	2
	Total	10

MCD2308 Certificate Course in Data Analytics and Visualization

Total Instructional Hours: 36   **Credit: 2**

Course Outcomes:

The student should be able to:

CO1: Identify various forms of data from the live environment.
CO2: Create Interactive data visualization using Excel.
CO3: Create Interactive data visualization using Tableau.
CO4: Create data visualizations using Power BI.

Module 1: Introduction to Data Analysis   **(8 hours)**

 Module 2: Excel - A Business Intelligence platform   **(10 hours)**

Module 3: Tableau - An Interactive Analytics platform   **(12 hours)**

Module 4: Power BI - Unleash the power of business analytics.   **(10 hours)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	**MCQ**	2
2	**Activity oriented Assessments**	3
3	**Project**	5
	Total	**10**

MCD2309 Certificate Course in Data Visualization using Power BI

Total Instructional Hours: 36   **Credit: 2**

Course Outcomes:

The student should be able to:

CO1   Understand the Power BI Ecosystem
CO2   Prepare Data for Visualization
CO3   Create Visualizations using various charts and maps
CO4   Create Reports and Dashboards

Module 1: Understanding The PBI Ecosystem   **(6 hours)**
Module 2: Data Preparation Skills Using Power Query   **(10 hours)**
Module 3: Create and Format Visualisations   **(10 hours)**
Module 4: Create and Format Reports   **(10 hours)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	MCQ	2
2	Activity oriented Assessments	3
3	Project	5
	Total	10

MCD2310: Certificate Course on Entrepreneurship & Intrapreneurship

Total Instructional Hours: Theory: 50 Hrs. Project: 20 Hrs.   **Credit: 4**

Course Outcomes:

The student should be able to:

CO1:   Develop an entrepreneurial mindset and to notice business ideas around them.
CO2:   Identify business models in the businesses around them.
CO3:   Develop business plans in a traditional way and in the lean start-up method.
CO4:   Acquire multiple skills and build value while running a start-up.
CO5:   Build personal resilience to run a company with agility and flexibility.

Module 1: Understanding the Uncertain Nature of the Future, Understanding Entrepreneurship and the Entrepreneurial Mindset   **(12 Hours)**
Module 2: Problem Finding, Idea Generation and Innovation, Critical Thinking & Creative Thinking
                                                                                               (11 Hours.)
Module 3: Entrepreneurship and Intrapreneurship & Business Model Canvas   **(8 Hours.)**
Module 4: Market Research and Customer Validation, Financial Literacy, Raising Capital and Funding, Team & Leadership   **(11 Hours.)**
Module 5: Marketing and Sales for Startups   **(8 Hours.)**

Components of Continuous Assessment

Sl No	Components of Assessment	Weight
1	Continuous assessment tests	4
2	Case Study	**3**
3	Project	2
4	Viva	**1**
	Total	**10**