

VAC021	CLOUD COMPUTING
Contact Hours	30 Hours
Prerequisite	Nil

Course Description

This course provides undergraduate students a comprehensive introduction to cloud computing and its role in modern IT environments. Through theoretical concepts, hands-on labs, and real-world case studies, students will gain an understanding of cloud computing models, services, implementation, and best practices.

Course Objectives

Students will be able to:

- Understand the fundamentals of cloud computing and its benefits.
- Implement cloud resources using popular cloud platforms.
- Manage and monitor cloud resources effectively.
- Develop skills to migrate applications to the cloud.

Course Outcomes

On completion of this course, students will be able to:

- CO 1: Identify different cloud computing models and deployment options.
CO 2: Describe various cloud service categories and their use cases.
CO 3: Evaluate the security and privacy considerations in cloud environments.
CO 4: Analyze cost management strategies for cloud resources.

Course Outline

Module 1: Introduction to Cloud Computing 3 hours

- Definition and characteristics of cloud computing
- Historical context and evolution of cloud computing
- Role of cloud computing in IT innovation

Module 2: Cloud Service Models and Deployment 3 hours

- Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS)

• Public, private, hybrid, and multi-cloud deployment models • Pros and cons of different deployment options	
Module 3: Cloud Service Categories	3 hours
• Compute, storage, and networking services • Database services and Big Data analytics in the cloud • IoT, AI, and machine learning services	
Module 4: Cloud Security and Compliance	3 hours
• Security challenges in cloud environments • Identity and access management in the cloud • Data protection and compliance considerations	
Module 5: Cloud Implementation and Resource Provisioning	3 hours
• Virtualization and containerization technologies • Creating virtual machines and containers in the cloud • Resource provisioning and scalability in cloud environments	
Module 6: Cloud Resource Management and Monitoring	3 hours
• Configuration and monitoring of cloud resources • Auto-scaling and load-balancing strategies • Cost optimization through resource management	
Module 7: Cloud Application Development and Deployment	3 hours
• Cloud-native application development principles • Continuous integration and continuous deployment (CI/CD) in the cloud • Serverless computing and microservices architecture	
Module 8: Cloud Migration and Integration	3 hours
• Strategies for migrating applications to the cloud • Integrating on-premises systems with cloud services • Data synchronization and hybrid cloud solutions	
Module 9: Case Studies in Cloud Computing	3 hours
• Real-world examples of successful cloud adoption • Industry-specific use cases for cloud computing • Lessons learned from cloud implementation projects	
Module 10: Future Trends in Cloud Computing	3 hours
• Edge computing and its impact on cloud architecture • Blockchain technology in cloud environments • Ethical considerations and sustainability in cloud computing	

Practicum

Throughout the course, students will engage in hands-on labs and practical exercises involving cloud computing platforms to provision resources, deploy applications, and manage services. Students will work on real-world scenarios, such as creating virtual machines, setting up databases, and building cloud-native applications. The practicum will provide give students hands-on experience to apply their knowledge in real cloud computing environments.

Textbook

Erl, T., Mahmood, Z., & Puttini, R. (2013). Cloud Computing: Concepts, Technology & Architecture. Prentice Hall.

Reference Book

Armbrust, M., & Fox, A. (Eds.). (2010). Above the Clouds: Managing Risk in the World of Cloud Computing. Springer.

Buyya, R., Broberg, J., & Goscinski, A. M. (2011). Cloud Computing: Principles and Paradigms. Wiley.

Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J., & Ghalsasi, A. (2011). Cloud Computing—The Business Perspective. Decision Support Systems, 51(1), 176-189.

	Evaluation Component	Weightage (%)
1	Activities	20
2	Presentation	20
3	Attendance	10
4	End Term Examination	50



Registrar
Mangalam University
Sohna Road, Gurugram (Haryana)



K.R. MANGALAM UNIVERSITY
E D U C A T I O N F O R L I F E
(Recognized by UGC and a member of AIU)

Ref.No.: KRMU/Admin./Notice/2019-20/ 1695(B)

Dated: 3rd August, 2019

NOTICE

This is to put for information that School of Engineering & Technology is offering Value-Added Course (VAC) for all interested students during ODD Semester as per the following specifications.

Course Code	Course Title	Coordinating Department / School	Duration
VAC017	Cybersecurity	SOET	30 Hrs.
VAC018	Data Analytics and Visualization	SOET	30 Hrs.
VAC021	Cloud Computing	SOET	30 Hrs.

- Maximum 100 seats are available for the course.
- Course Start Date: 03 September 2019
- Course End Date: 01 November 2019

All interested students are required to confirm their registration with the Dean-School of Engineering & Technology latest by 23rd August, 2019.

Signature

Registrar

Copy to:

- Vice Chancellor : For kind information
- Dean (Academics Affairs)
- Controller of Examinations
- All Deans/ School Coordinators
- All Faculty Members/ Mentors
- Notice Board
- Office Copy

Signature

Registrar
K.R. Mangalam University
Sector Road, Gurugram (Haryana)



ROLL NO	NAME	PROGRAMME	SEMESTER	3-Sep-19	4-Sep-19	5-Sep-19	6-Sep-19	7-Sep-19	8-Sep-19	11-Sep-19	13-Sep-19	14-Sep-19
1901010006	AAKASH RAGHAV	B.Tech CSE	Semester I	A	P	P	P	A	P	P	P	P
1901010007	SHIVANGI SINHA	B.Tech CSE	Semester I	P	P	P	P	P	P	P	P	P
1901010015	GUNESH GAUTAM	B.Tech CSE	Semester I	A	P	P	P	P	P	P	P	P
1901010023	NAMAN BHARDWAJ	B.Tech CSE	Semester I	P	P	P	P	P	P	P	P	P
1901010035	TANUL PRABHAT RAI	B.Tech CSE	Semester I	P	P	P	P	A	P	P	P	P
1901010036	R ROHIT CHANDARAN	B.Tech CSE	Semester I	P	P	P	P	P	A	P	P	P
1901010047	RUBY CHHONKER	B.Tech CSE	Semester I	P	P	P	P	P	P	P	P	P
1901010048	TANISHQ PAL	B.Tech CSE	Semester I	P	P	P	P	P	P	P	P	P
1901010050	ADARSH SINGH	B.Tech CSE	Semester I	P	P	P	P	P	P	P	P	P
1701020002	ANURAG KUMAR	B.Tech ME	Semester V	P	P	P	P	P	P	P	P	P
1701020004	RAHUL SINGH	B.Tech ME	Semester V	P	P	A	P	P	P	P	P	A
1701020008	ANUJ KHATANA	B.Tech ME	Semester V	P	P	P	P	P	P	P	P	P
1701022019	NARENDER KUMAR	B.Tech ME	Semester V	P	P	A	P	P	P	P	P	A
1701050004	MANISH JHA	B.Tech Civil	Semester V	A	P	P	A	A	P	P	P	A
1701051012	MOHD. NASEEM	B.Tech Civil	Semester V	P	P	A	P	P	P	P	P	P
1703590004	PRIYANKA	M.Sc Phys	Semester V	P	A	P	P	P	P	P	P	P
1703590005	YASHIKA BAJAJ	M.Sc Phys	Semester V	P	P	A	P	P	P	P	P	P
1703680004	SAPNA KUMARI	M.Sc Chem	Semester V	A	P	A	P	P	P	P	P	A
1703680005	KALPANA	M.Sc Chem	Semester V	P	A	P	P	A	P	P	P	A
1705140004	ABHISHEK SINGH	BBA LLB (H)	Semester V	P	P	A	A	A	P	P	A	P
1705140022	ANSHITA SURANA	BBA LLB (H)	Semester V	P	P	P	P	A	P	P	P	A

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

DEAN
School of Engineering & Technology (SOET)
K.R. Mangalam University
Sohna road, Gurugram
Haryana 122103



ROLL NO	NAME	17-Sep-19	19-Sep-19	19-Sep-19	19-Sep-19	22-Sep-19	24-Sep-19	26-Sep-19	28-Sep-19	1-Oct-19	3-Oct-19	4-Oct-19	8-Oct-19	9-Oct-19
1901010006	AAKASH RAGHAV	P	A	P	P	A	P	P	P	P	P	P	A	P
1901010007	SHIVANGI SINHA	P	P	P	P	P	P	P	P	P	A	P	P	P
1901010015	GUNESH GAUTAM	P	P	P	P	P	P	P	P	P	P	P	P	P
1901010023	NAMAN BHARDWAJ	P	A	P	P	A	P	P	P	P	A	P	P	A
1901010035	TANUL PRABHAT RAI	P	P	P	P	P	P	P	P	P	P	P	P	P
1901010036	R ROHIT CHANDARAN	P	P	P	P	P	P	P	P	P	P	P	P	P
1901010047	RUBY CHHONKER	P	P	P	P	P	P	P	P	P	A	P	P	P
1901010048	TANISHQ PAL	P	P	P	P	P	P	P	P	P	P	P	P	P
1901010050	ADARSH SINGH	A	P	P	P	P	P	P	P	P	A	P	P	A
1701020002	ANURAG KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P
1701020004	RAHUL SINGH	P	P	P	P	P	P	P	P	P	P	A	P	P
1701020008	ANUJ KHATANA	P	P	P	P	A	P	P	A	P	P	P	P	P
1701022019	NARENDER KUMAR	A	P	P	P	P	P	P	P	P	P	P	P	P
1701050004	MANISH JHA	P	P	P	P	P	P	P	P	P	P	A	P	P
1701051012	MOHD. NASEEM	P	P	P	P	P	P	P	P	P	P	P	P	P
1703590004	PRIYANKA	A	P	A	P	P	P	P	P	P	P	P	P	A
1703590005	YASHIKA BAJAJ	P	P	P	P	A	P	P	P	P	P	P	P	P
1703680004	SAPNA KUMARI	P	P	P	P	P	P	P	P	P	P	P	P	A
1703680005	KALPANA	P	P	P	P	P	P	P	P	P	P	A	P	A
1705140004	ABHISHEK SINGH	P	P	P	P	P	P	P	P	P	A	P	P	P
1705140022	ANSHITA SURANA	P	P	P	P	P	P	P	P	P	P	P	P	P

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

DEAN
School of Engineering & Technology (SOET)
K.R. Mangalam University
Sohna road, Gurugram
Haryana 122102

COURSE INCHARGE



VAC COURSE FOR ACADEMIC YEAR 2019-20

COURSE CODE: VAC021

COURSE TITLE: CLOUD COMPUTING

ROLL NO	NAME	10-Oct-19	11-Oct-19	13-Oct-19	15-Oct-19	16-Oct-19	19-Oct-19	19-Oct-19	19-Oct-19	22-Oct-19	23-Oct-19	24-Oct-19	26-Oct-19	29-Oct-19
1901010006	AAKASH RAGHAV	P	P	P	P	P	P	P	P	A	P	A	A	P
1901010007	SHIVANGI SINHA	P	A	A	A	P	A	P	P	P	P	P	P	A
1901010015	GUNESH GAUTAM	A	P	P	P	P	P	P	P	P	A	P	P	A
1901010023	NAMAN BHARDWAJ	P	P	A	A	P	P	P	P	A	P	P	P	P
1901010035	TANUL PRABHAT RAI	A	P	P	P	P	A	P	P	A	P	P	P	P
1901010036	R ROHIT CHANDARAN	P	P	P	P	P	P	P	P	P	P	P	P	P
1901010047	RUBY CHHONKER	P	A	P	P	P	A	P	P	A	P	P	P	A
1901010048	TANISHQ PAL	A	A	P	P	P	P	P	P	P	A	P	P	A
1901010050	ADARSH SINGH	P	P	P	A	P	P	P	P	P	P	P	P	P
1701020002	ANURAG KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P
1701020004	RAHUL SINGH	P	P	P	P	P	P	P	P	P	P	P	P	P
1701020008	ANUJ KHATANA	P	A	P	A	P	A	P	P	P	P	A	P	P
1701022019	NARENDER KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P
1701050004	MANISH JHA	P	P	P	P	P	P	P	P	P	P	P	P	P
1701051012	MOHD. NASEEM	P	P	P	P	P	P	P	P	P	P	P	P	P
1703590004	PRIYANKA	P	A	P	P	P	P	P	P	P	P	P	P	P
1703590005	YASHIKA BAJAJ	P	P	A	P	P	P	P	P	P	P	A	P	P
1703680004	SAPNA KUMARI	P	P	P	P	P	P	P	P	P	P	P	P	P
1703680005	KALPANA	A	P	P	P	P	P	P	P	P	P	A	P	P
1705140004	ABHISHEK SINGH	P	P	P	P	P	A	P	P	A	P	P	P	P
1705140022	ANSHITA SURANA	P	P	P	P	P	P	P	P	P	P	P	P	P

[Signature]

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

DEAN
School of Engineering & Technology (SOET)
K.R. Mangalam University
Sohna Road, Gurugram
Haryana 122103
[Signature]
DEAN

[Signature]
COURSE INCHARGE



ROLL NO	NAME	30-Oct-19	1-Nov-19	Total	Present	Percentage
1901010006	AAKASH RAGHAV	P	P	35	28	80.00
1901010007	SHIVANGI SINHA	P	P	35	29	82.86
1901010015	GUNESH GAUTAM	P	A	35	30	85.71
1901010023	NAMAN BHARDWAJ	P	A	35	27	77.14
1901010035	TANUL PRABHAT RAI	A	P	35	30	85.71
1901010036	R ROHIT CHANDARAN	P	P	35	34	97.14
1901010047	RUBY CHHONKER	P	A	35	29	82.86
1901010048	TANISHQ PAL	P	P	35	31	88.57
1901010050	ADARSH SINGH	P	P	35	31	88.57
1701020002	ANURAG KUMAR	P	P	35	35	100.00
1701020004	RAHUL SINGH	P	A	35	30	85.71
1701020008	ANUJ KHATANA	P	P	35	29	82.86
1701022019	NARENDER KUMAR	P	P	35	32	91.43
1701050004	MANISH JHA	A	P	35	29	82.86
1701051012	MOHD. NASEEM	P	P	35	33	94.29
1703590004	PRIYANKA	P	P	35	30	85.71
1703590005	YASHIKA BAJAJ	A	A	35	29	82.86
1703680004	SAPNA KUMARI	P	P	35	28	80.00
1703680005	KALPANA	P	P	35	28	80.00
1705140004	ABHISHEK SINGH	P	P	35	30	85.71
1705140022	ANSHITA SURANA	P	A	35	32	91.43

[Signature]

Registrar

K.R. Mangalam University
Sohna Road, Gurugram, (Haryana)

[Signature]

COURSE INCHARGE

[Signature]
DEAN



K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

VALUE ADDED COURSE (VAC)

ACADEMIC YEAR 2019-20

COURSE CODE: VAC021

COURSE TITLE: CLOUD COMPUTING

COURSE OFFERED BY: SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)

LIST OF STUDENTS COMPLETING THE COURSE

S.NO	SESSION	ROLL NO	NAME	PROGRAMME	SEMESTER	COURSE CODE	COURSE TITLE	SCHOOL
1	2019-20	1901010006	AAKASH RAGHAV	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
2	2019-20	1901010007	SHIVANGI SINHA	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
3	2019-20	1901010015	GUNESH GAUTAM	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
4	2019-20	1901010023	NAMAN BHARDWAJ	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
5	2019-20	1901010035	TANUL PRABHAT RAI	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
6	2019-20	1901010036	R ROHIT CHANDARAN	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
7	2019-20	1901010047	RUBY CHHONKER	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
8	2019-20	1901010048	TANISHQ PAL	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
9	2019-20	1901010050	ADARSH SINGH	B.Tech CSE	Semester I	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
10	2019-20	1701020002	ANURAG KUMAR	B.Tech ME	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
11	2019-20	1701020004	RAHUL SINGH	B.Tech ME	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
12	2019-20	1701020008	ANUJ KHATANA	B.Tech ME	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
13	2019-20	1701022019	NARENDER KUMAR	B.Tech ME	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
14	2019-20	1701050004	MANISH JHA	B.Tech Civil	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
15	2019-20	1701051012	MOHD. NASEEM	B.Tech Civil	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
16	2019-20	1703590004	PRIYANKA	M.Sc Phys	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
17	2019-20	1703590005	YASHIKA BAJAJ	M.Sc Phys	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF BASIC AND APPLIED SCIENCES (SBAS)
18	2019-20	1703680004	SAPNA KUMARI	M.Sc Chem	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF BASIC AND APPLIED SCIENCES (SBAS)
19	2019-20	1703680005	KALPANA	M.Sc Chem	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF BASIC AND APPLIED SCIENCES (SBAS)
20	2019-20	1705140004	ABHISHEK SINGH	BBA LLB (H)	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF BASIC AND APPLIED SCIENCES (SBAS)
21	2019-20	1705140022	ANSHITA SURANA	BBA LLB (H)	Semester V	VAC021	CLOUD COMPUTING	SCHOOL OF LEGAL STUDIES (SOLS)

[Signature]

Registrar

K.R. Mangalam University

Sohna Road, Gurugram (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **AAKASH RAGHAV**, University Enrolment No **1901010006** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021** (Cloud Computing) during Academic Session **2019-20** (Odd Semester).

Date:10.01.2020

hrahajan

Controller of Examination

[Signature]

Registrar
K.R. Mangalam University
Sohna Road, Gurugram (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **SHIVANGI SINHA**, University Enrolment No **1901010007** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hahajan

Controller of Examination

Registrar

K.R. Mangalam University
Sohna Road, Gurgaon, (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **GUNESH GAUTAM**, University Enrolment No **1901010015** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021** (Cloud Computing) during Academic Session **2019-20** (Odd Semester).

Date: 10.01.2020

h. ahajan

Controller of Examination

[Signature]

Registrar

K.R. Mangalam University
Sohna Road, Gurgaon (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **NAMAN BHARDWAJ**, University Enrolment No **1901010023** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021** (Cloud Computing) during Academic Session **2019-20** (Odd Semester).

Date:10.01.2020

Naman

Controller of Examination



Registrar

K.R. Mangalam University

Sohna Road, Gurugram, Haryana



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **TANUL PRABHAT RAI**, University Enrolment No **1901010035** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021** (Cloud Computing) during Academic Session **2019-20** (Odd Semester).

Date:10.01.2020

brahajan

Controller of Examination

Prof. Dr. B. R. Brahajan

Registrar

K.R. Mangalam University
Sohna Road, Gurgaon (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **R ROHIT CHANDARAN**, University Enrolment No **1901010036** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021** (Cloud Computing) during Academic Session **2019-20** (Odd Semester).

Date:10.01.2020

h.rahajan

Controller of Examination

Registrar

K.R. Mangalam University
Sohna Road, Gurgaon (Haryana)



K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **RUBY CHHONKER**, University Enrolment No **1901010047** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021** (Cloud Computing) during Academic Session **2019-20** (Odd Semester).

Date:10.01.2020

brahajan

Controller of Examination

[Signature]

Registrar

K.R. Mangalam University
Sahni Road, Gurugram (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **TANISHQ PAL**, University Enrolment No **1901010048** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

brahajan

Controller of Examination ,

[Signature]

Registrar

K.R. Mangalam University
Sohna Road, Gurgaon (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **ADARSH SINGH**, University Enrolment No **1901010050** of **B.Tech CSE** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

brahajan

Controller of Examination

Bop

Registrar

K.R. Mangalam University

Colaba Road, Guwahati, Assam-781005



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **ANURAG KUMAR**, University Enrolment No **1701020002** of **B.Tech ME** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hachajan

Controller of Examination

B.P.

Registrar

K. R. Mangalam University

(K. R. Mangalam, Bangalore)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **RAHUL SINGH**, University Enrolment No **1701020004** of **B.Tech ME** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hahajan

Controller of Examination

hahajan

Registrar

K.R. Mangalam University

80000 Road, Gurugram (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **ANUJ KHATANA**, University Enrolment No **1701020008** of **B.Tech ME** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

brahajan

Controller of Examination



Registrar

K.R. Mangalam University

(K.R. Mangalam University)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **NARENDER KUMAR**, University Enrolment No **1701022019** of **B.Tech ME** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hahajan

Controller of Examination

hahajan

Registrar

K.R. Mangalam University
Sohna Road, Gurgaon (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **MANISH JHA**, University Enrolment No **1701050004** of **B.Tech Civil** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hahajan

Controller of Examination

hahajan

Registrar

K.R. Mangalam University

3, 3rd Floor, Gurgaon (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **MOHD. NASEEM**, University Enrolment No **1701051012** of **B.Tech Civil** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hachajan

Controller of Examination,

Bap

Registrar

K.R. Mangalam University
Sector-10, Gurgaon (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **PRIYANKA**, University Enrolment No **1703590004** of **M.Sc Phys** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hahajan

Controller of Examination

Registrar

K.R. Mangalam University
Gedera Road, Gunduram (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **YASHIKA BAJAJ**, University Enrolment No **1703590005** of **M.Sc Phys programme** has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

hahajan

Controller of Examination

Bajaj

Registrar

K.R. Mangalam University
Gurgaon, Haryana



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **SAPNA KUMARI**, University Enrolment No **1703680004** of **M.Sc Chem** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date: 10.01.2020

h. rajan

Controller of Examination

Registrar

K.R. Mangalam University
Gidder S Road, Gurgaon (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **KALPANA**, University Enrolment No **1703680005** of **M.Sc Chem** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

h. mahajan

Controller of Examination

[Signature]

Registrar

K.R. Mangalam University
Sohna Road, Gurugram (Haryana)



K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **ABHISHEK SINGH**, University Enrolment No **1705140004** of **BBA LLB (H)** programme has successfully qualified **VALUE ADDED COURSE VAC021** (Cloud Computing) during Academic Session **2019-20** (Odd Semester).

Date: 10.01.2020

hahajan

Controller of Examination

[Signature]

Registrar
K.R. Mangalam University
Bang Road, Gurugram (Haryana)



K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

CERTIFICATE OF COMPLETION

This is to certify that **ANSHITA SURANA**, University Enrolment No **1705140022** of **BBA LLB (H)** programme has successfully qualified **VALUE ADDED COURSE VAC021 (Cloud Computing)** during Academic Session **2019-20 (Odd Semester)**.

Date:10.01.2020

h. rajan

Controller of Examination

[Signature]

Registrar
K. R. Mangalam University
(Mangalam, Chennai)