DEPARTMENT OF COMPUTER SCIENCE
ALIGARH MUSLIM UNIVERSITY
ALIGARH, U.P. – 202002
Courses: MCA (CBCS)
Session 2017 -2020
Curriculum Structure

1st Year: 2017-2018
2nd Year: 2018-2019
3rd Year: 2019-2020

	COURSE NO.	PAPER TITLE	Periods Per Week (L+T)/P	Credits	Sessional Marks/ Continuous Evaluation	Mid-Term Marks	Final Marks	Total Marks
MCA 1st Year		**(I-Semester) w.e.f. : August-2017**						
Ist SEMESTER	CSM-1101	Problem Solving using C++	3+1	4	10	30	60	100
	CSM-1102	Data Structure and its Applications	3+1	4	10	30	60	100
	CSM-1103	Systems Analysis and Design	3+1	4	10	30	60	100
	CSM-1104	Digital Logic and Computer Organization	3+1	4	10	30	60	100
	CSM-1105	Fundamentals of IS & IT	1+1	2	10	30	60	100
	CSM-1106	Soft Skills Development	1+1	2	10	30	60	100
	CSM-11P1	Laboratory Course –I	6	4	40		60	100
		Total		**24**				**700**
MCA 1st Year		**(II-Semester) w.e.f. : January-2018**						
IInd SEMESTER	CSM-2201	Object Oriented Programming using Java	3+1	4	10	30	60	100
	CSM-2202	Database Management System	3+1	4	10	30	60	100
	CSM-2203	Object Oriented Analysis and Design of IS	3+1	4	10	30	60	100
	CSM-2204	Numerical and Statistical Computing	3+1	4	10	30	60	100
	CSM-2205	Design and Analysis of Algorithms	1+1	2	10	30	60	100
	CSM-2206	Technical Communication	1+1	2	10	30	60	100
	CSM-22P1	Laboratory Course –II	6	4	40		60	100
		Total		**24**				**700**
MCA 2nd Year		**(III-Semester) w.e.f. : August-2018**						
IIIrd SEMESTER	CSM-3301	Web based Programming	3+1	4	10	30	60	100
	CSM-3302	Operating System	3+1	4	10	30	60	100
	CSM-3303	Software Engineering and Quality Assurance	3+1	4	10	30	60	100
	CSM-3304	Data Communication & Computer Network	3+1	4	10	30	60	100
	CSM-3305	Microprocessor: Architecture and Applications	1+1	2	10	30	60	100
	CSM-3306	Discreet Mathematics	1+1	2	10	30	60	100
	CSM-33P1	Laboratory Course–III	6	4	#60		#40	100
		Total		**24**				**700**

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	COURSE NO.	PAPER TITLE	Periods Per Week (L+T)/P	Credits	Sessional Marks/ Continuous Evaluation	Mid-Term Marks	Final Marks	Total Marks
MCA 2nd Year		**(IV-Semester) w.e.f. : January-2019**						
IVth SEMESTER	CSM-4401	Network Programming	3+1	4	10	30	60	100
	CSM-4402	Theory of Computation	3+1	4	10	30	60	100
	CSM-4403	Artificial Intelligence and Soft Computing	3+1	4	10	30	60	100
	CSM-4404	Compiler Construction	1+1	2	10	30	60	100
	CSM-44E1	*Elective - 1 (EL-1)*	1+1	2	10	30	60	100
	CSM-4461	**Open Elective**	4	4	10	30	60	100
	CSM-44P1	Laboratory Course –IV	6	4	#60		#40	100
		Total		**24**				**700**
MCA 3rd Year		**(V-Semester) w.e.f.: August-2019**						
Vth SEMESTER	CSM-5501	Cyber Security	3+1	4	10	30	60	100
	CSM-5502	Computer Graphics	1+1	2	10	30	60	100
	CSM-55E2	*Elective - 2 (EL-2)*	1+1	2	10	30	60	100
	CSM-55E3	*Elective - 3 (EL-3)*	3+1	4	10	30	60	100
	CSM-55E4	*Elective - 4 (EL-4)*	3+1	4	10	30	60	100
	CSM-55E5	*Elective - 5 (EL-5)*	3+1	4	10	30	60	100
	CSM-55P1	Laboratory Course–V	6	4	#60		#40	100
		Total		**24**				**700**
MCA 3rd Year		**(VI-Semester) w.e.f.: January-2020**						
VIth SEMESTER	CSM-66D1	**Dissertation/Project Work**	Problem Identification, self study and Development/Field work/ Dissertation Writing	12	200			350
			Open Pre-submission Presentation (OPP)				150	
			Dissertation Presentation/Final Viva	12				350
		Total		**24**				**700**
		Grand Total		**144**				**4200**

*L - Lecture; *T - Tutorial; *P - Practical/Lab; *D - Dissertation/Project; **#Weightage** for project based Lab Courses

List of Electives

1. *Students are required to select one course from each set of electives (EL-1 to EL-5) offered by the department from time-to-time.*

2. *Students of the department of Computer Science are required to opt any Open Elective course offered by other departments of faculty of Science, preferably Mathematics, Statistics & OR, GIS, etc.*

Elective-1 (EL-1): (Credit-2) *(Within Department)*

CSM-4411: Linux Administration & Shell Programming
CSM-4412: Advance Computer Architecture
CSM-4413: Big Data Analytics

Elective-2 (EL-2): (Credit-2) *(Within Department)*

CSM-5521: ERP Systems
CSM-5522: Mobile Computing
CSM-5523: Embedded Systems
CSM-5524: Free and Open Source Software

Elective-3 (EL-3): (Credit-4) *(Within Department)*

CSM-5531: Optimization Techniques
CSM-5532: Simulation and Modeling
CSM-5533: Parallel Computing
CSM-5534: Grid and Cloud Computing

Elective-4 (EL-4): (Credit-4) *(Within Department)*

CSM-5541: Advance DBMS and DBA
CSM-5542: Fuzzy Systems and Control
CSM-5543: Intelligent Systems

Elective-5 (EL-5): (Credit-4) *(Within Department)*

CSM-5551: Data Mining and Knowledge Discovery
CSM-5552: E-Commerce
CSM-5553: Business Intelligence
CSM-5554: Accounting and Financial Management

Open Elective: (Credit-4) (Inter-departmental within Faculty) *(Offered by other Departments of F/O Science)*

CSM-4461: Fundamentals of IT (For students of Faculty of Science other than Computer Science)

Note: Students of Computer Science department will opt any *Open Elective* course offered by   other departments of Faculty of Science, preferably Mathematics, Statistics & OR, GIS, etc.

DEPARTMENT OF COMPUTER SCIENCE
ALIGARH MUSLIM UNIVERSITY ALIGARH, U.P. – 202002
Semester Courses: MCA, Session 2016 -2017
Curriculum Structure

	COURSE NO.	PAPER TITLE	Periods per week Theory Lab +Tutorials		Credits	Sessional Marks/ Continuous Evaluation	Mid-Sem Marks	Final Marks	Total Marks
MCA 1st Year	**w.e.f. : 2015-2016**								
Ist SEMESTER	CSM-1001	Fundamentals of Information Technology	3+1		4	10	30	60	100
	CSM-1002	Programming & Problem Solving using C	3+1		4	10	30	60	100
	CSM-1003	Analysis and Design of Information Systems	3+1		4	10	30	60	100
	CSM-1004	Digital Logic and Computer Organization	3+1		4	10	30	60	100
	CSM-1005	Numerical and Statistical Methods	3+1		4	10	30	60	100
	CSM-1071	Laboratory Course – I		4+2	4	40	-	60	100
IInd SEMESTER	CSM-2001	Algorithms and Data Structure using C++	3+1		4	10	30	60	100
	CSM-2002	Object Oriented Programming using Java	3+1		4	10	30	60	100
	CSM-2003	Analysis and Design of Information Systems (Object Oriented Approach)	3+1		4	10	30	60	100
	CSM-2004	Database Management System	3+1		4	10	30	60	100
	CSM-2005	Discrete Mathematical Structure	3+1		4	10	30	60	100
	CSM-2071	Laboratory Course – II		4+2	4	40	-	60	100
M.C.A. 2nd Year	**w.e.f. : 2015-2016**								
IIIrd SEMESTER	CSM-3001	Operating System	3+1		4	10	30	60	100
	CSM-3002	Visual Programming	3+1		4	10	30	60	100
	CSM-3003	Artificial Intelligence	3+1		4	10	30	60	100
	CSM-3004	Theory of Computation	3+1		4	10	30	60	100
	CSM-3021	**Data Warehousing & Data Mining**	3+1		4	10	30	30	100
	CSM-3022	**Soft Computing**							
	CSM-3023	**Computer Graphics**							
	CSM-3024	**ERP System**							
	CSM-3071	Laboratory Course – III		4+2	4	40	-	60	100

IVth SEMESTER	CSM-4001	Data Communication & Computer Network	3+1	4	10	30	60	100
	CSM-4002	Internet and Web Technologies	3+1	4	10	30	60	100
	CSM-4003	Linux and Shell Programming	3+1	4	10	30	60	100
	CSM-4021	**Compiler Construction**	3+1	4	10	30	60	100
	CSM-4022	**Optimization Techniques**						
	CSM-4023	**Parallel Programming with MPI**						
	CSM-4024	**Simulation & Modeling**						
	CSM-4091	Information Technology and its Applications (Open Elective)	3+1	4	10	30	60	100
	CSM-4071	Laboratory Course –IV	4+2	4	40	-	60	100
M.C.A. 3rd Year	**w.e.f.: 2015-2016**							
V SEMESTER	CSM-5001	Software Engineering	3+1	4	10	30	60	100
	CSM-5002	Microprocessor: Architecture Applications	3+1	4	10	30	60	100
	CSM-5003	E-Commerce	3+1	4	10	30	60	100
	CSM-5021	**TCP/IP Programming**	2	2	10	30	60	100
	CSM-5022	**Mobile Computing**						
	CSM-5023	**Software Quality Assurance**						
	CSM-5024	**Account & Finance Management**	2	2	10	30	60	100
	CSM-5025	**Network Security**						
	CSM-5026	**Elective of CS (Information Security)**	3+1	4	10	30	60	100
	CSM-5071	Laboratory Course–V	4+2	4	40	-	60	100
VI Semester	CSM-6D1	**Dissertation Work (4 to 6 month Duration)** Problem Identification, self study and Development/ Field work/ Dissertation Writing	-	12	40	-	60	100
		Dissertation Presentation/Final Viva		12	40	-	60	100