Direction

No. 28 /2019   Date : 31 / 08/2019

Subject :   **Examinations leading to the Degree of Master in Computer Application (Three Year Degree Course.... Semester Pattern) as per Credit Grade System in the Faculty of Science & Technology, Direction, 2019.**

Whereas, Direction No. 33/2010 regarding the examinations leading to the Degree of Master in Computer Application (Three Year Degree Course.... Semester Pattern) as per Credit Grade System in the Faculty of Engineering & Technology, Direction, 2010 is in existence in the University,

AND

Whereas, the Ad-hoc Committee in Computer Science & Engineering its meetings held on 21/6/2019, 02/07/2019 and 10/07/2019 has prepared and recommended the Schemes of teaching & examination of Semester I to VI along with draft Syllabi of Semester I & II of Master in Computer Application (Three Year Degree Course.... Semester Pattern ...Credit Grade System) as per A.I.C.T.E. Guidelines for M.C.A. Course to be implemented from the academic session 2019-2020 and onwards in phase wise manner,

AND

Whereas, the Honøble Vice-Chancellor has accepted & approved the recommendian of the above Committee on behalf of the Faculty of Science & Technology and Academic Council regarding implementation of Scheme of teaching & examinations of Semester I to VI along with draft Syllabi of Semester I & II of Master in Computer Application (Three Year Degree Course.... Semester Pattern ... Credit Grade System) as per under Sub Section (7) of Section 12 of M.P.U.Act, 2016 to be implemented from the academic session 2019-2020 and onwards in phase wise manner,

AND

Whereas, the Schemes of teaching & examinations of Semester I to VI along with draft Syllabi of Semester I & II of Master in Computer Application (Three Year Degree Course.... Semester Pattern ...Credit Grade System) Courses are to be implemented from the academic session 2019-2020 and onwards in **phase wise manner**,

AND

Whereas, the the Schemes of teaching & examinations and other provisions are required to be regulated by the Regulation and Ordinance,

AND

Whereas, matter of making Regulation and Ordinance are a time consuming process,

Now, therefore, I, Dr. M. G. Chandekar, Vice-Chancellor of Sant Gadge Baba Amravati University, in exercise of powers conferred upon me, under sub-section (8) of Section 12 of the Maharashtra Public Universities Act, 2016, having issued the following directions;

1.   Examinations leading to the Degree of Master in Computer Application (Three Year Degree Course.... Semester Pattern) as per Credit Grade System in the Faculty of Science & Technology, Direction, 2019.

2.   This Direction shall come into force with effect from the date of its issuance.

3.   This Direction shall come into force w.e.f. the session :-
        i)   2019-2020 for First Year M.C.A.
        ii) 2020-2021 for Second Year M.C.A. and
        iii) 2021-2012 for Third Year M.C.A.

4.   Subject to their compliance with the provisions of this Direction and other ordinances in force from time to time along with the rules/regulations received from the Govt. of Maharashtra, the following person shall be eligible for admission to MCA.

       (a) The Candidate should be an Indian National,

       b)   Passed minimum three (3) years duration Bachelorøs Degree awarded by the University recognized by the University Grants Commission or Association of Indian Universities in any discipline with at least 50% marks in aggregate or equivalent (At least 45% in case of candidates of backward class categories and Persons with Disability belonging to Maharashtra State only,

       c)   Studied Mathematics as one of the subjects at (10 + 2) level or at Graduate level examination,

       d)   A person passing a PGDCS Exam. of Sant Gadge Baba Amravati University, satisfying the condition given in "a" above are eligible to take admission directly at second year of MCA (subject to condition of availability of seats, in total intake capacity) subject to condition that he will pass the subject heads of 1st MCA not covered at PGDCS level.

e)   For Direct Second Year admissions, the candidate should have passed Bachelor Degree in Computer Applications or Science (Informatin Technology or Computer Science).

5.   (i)   Duration of the course shall be of three academic years.

(ii) Courses of First year MCA, Second year MCA and Third year MCA are divided into two parts every year i.e. part-I and part-II and the University shall hold Examination in Winter and in Summer every year for both the Part-I & II.

(iii) The main Examination of Part-I shall be held in Winter & the Main Examination of Part-II shall be held in Summer every year. The Supplementary examination for Part-I shall be held in Summer and the Supplementary Examination for Part-II shall be held in Winter every year.

6.   For purposes of instruction and examination the student shall study sequentially.

7.   The period of academic session / term shall be such as may be notified by the University.

8.   The Examinations shall be held at such places and on such dates as may be notified by the University.

9.   Subject to his/her compliance with the provisions of this Direction and of other Ordinances (Pertaining to Examinations in General) in force from time to time, the applicant for admission, at the end of the course of study of a particular term shall be eligible to appear at it, if,

i) He/She satisfied the condition in the table and the provision thereunder.

ii)   He/She has prosecuted a regular course of study in the University/College affiliated to the University.

iii) He/She has in the opinion of the Head of the Department/Principal shown satisfactory progress in his/her studies.

Name of Exam	The student should have passed the examination of	The student should have completed the session / term satisfactorily
1	2	3
First Year MCA Part-I	The qualifying Examination mentioned in para-3	First Yr. MCA Part-I
First Year MCA Part-II	----------	First Yr. MCA Part-I & II
Second Year MCA Part-I	----------	Second Year MCA Part-I
Second Year MCA Part-II	----------	Second Year MCA Part-I & II
Third Year MCA Part-I	Shall have cleared Ist of MCA & qualified for admission to Third Year as per para-4	Third Year MCA Part-I
Third Year MCA Part-I)	----------	Third Year MCA Part-I & II

10.   The schemes of teaching & examinations shall be as provided under õAppendix-Aö appended with this Direction.

11.   Common Instructions for all the Semesters regarding Choice Based Credits (CBC) / Open Electives (OE) are as under :

The Subjects/Modules/Activity to be undertaken by the Student under the Open Electives approved by the Department /Institute. The schedule of approval will be declared by the Department / Institute at the beginning of the Semester (1st July) as per details given below :

One Faculty Member will work as a Coordinator for Open Electives for which 01 Hour of Theory period will be considered as a weekly work load against this work. All Coordinators has to do counseling of respective Open electives, do the Students Registration process and allot them to faculty members (will be working as a mentor). All these electives are internally accessed by respective Coordinators & Guides based on Minimum 03 Class Tests/ Final Objective Test/ Demo/ Report Submission / Certificate issued by competent authority Viva Voce and other methods as decided by the Department / Institute.

The Mentor shall conduct Tutorial Classes for Workload counting purpose, it should be noted that: 01 Tutorial hour is equal to 01 Theory Hour. For Tutorial, Batch of Maximum 20 Students will be considered and the Tutorial Batch should not be comprised of Less than 04 Students.

Coordinator shall take care that the students are not repetitively opting for same type of Electives in every Semester.

Summary of conduction of Choice Based Credits (CBC) /Open Electives (OC) Electives for all Semesters :-

i)   Electives Selection Process starts at beginning of the Semester.

ii) Declare the names of Coordinator for Open Electives.

iii) Counseling of Students by Coordinators for selection of Open Elecetives.

iv) Registration of Students by Coordinators under respective Open Electives.

v)   Allotment of Registered Students to Mentor from Department.

vi) Guidance/Counseling to Students by Mentor throughout the Semester.

vii) General Counseling by Coordinators over the Semester, whenever required.

viii) Final Assessment of Students by Coordinators & Mentor for Allotment of Final Credits.

ix) Submission of Credits gained by Students to the Head of Department from Coordinators

12.   i) The scope of the subject is as indicated in the syllabus.
       a. The medium of instruction and examination shall be English.

13. The fees for each M.C.A. Examinations (Theory & Practical) shall be as prescribed by University from   time to time.

14. The computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of an examinee shall be as given below :-

The marks will be given in all examinations which will include college assessment marks and the total marks for each Theory / Practical shall be converted into Grades as per **Table II.**

SGPA shall be calculated based on Grade Points corresponding to Grade as given in Table II and the Credits allotted to respective Theory / Practical shown in the scheme for respective semester. SGPA shall be computed for First Year (Part I & II), Second Year (Part I & II) and Third Year (Part I & II) and CGPA shall be computed in Third Year (Part II) based on SGPAs of First Year (Part I & II), Second Year (Part I & II) and Third Year (Part I & II). :-

$$SGPA = \frac{C_1 \times G_1 + C_2 \times G_2 + ... + C_n \times G_n}{C_1 + C_2 + ... + C_n}$$

Where C_1 = Credit of individual Theory / Practial

G_1 = Corresponding Grade Point obtained in the respective Theory / Practical

$$CGPA = \frac{(SGPA)_{First\ Year\ Part-I} \times (Cr)_{First\ Year\ Part-I} + ... + (SGPA)_{Third\ Year\ Part-II} \times (Cr)_{Third\ Year\ Part-II}}{(Cr)_{First\ Year\ Part-I} + ... + (Cr)_{Third\ Year\ Part-II}}$$

Where $(SGPA)_{First\ Year\ Part-I\ to\ Third\ Year\ Part-II}$ = SGPA of First Year Part-I to Third Year Part-II

$(Cr)_{First\ Year\ Part-I\ to\ Third\ Year\ Part-II}$ = Total Credits for First Year Part-I to Third Year Part-II

CGPA equal to 6.00 and above shall be considered as equivalent to First Class which shall be mentioned on Grade Card of Third Year Part-II as a foot note.

TABLE II

THEORY

Grade	Percentage of Marks	Grade Points
AA	80 ≤ Marks ≤ 100	10
AB	70 ≤ Marks < 80	9
BB	60 ≤ Marks < 70	8
BC	55 ≤ Marks < 60	7
CC	50 ≤ Marks < 55	6
CD	45 ≤ Marks < 50	5
DD	40 ≤ Marks < 45	4
FF	00 ≤ Marks < 40	0
ZZ	Absent in Examination	ô

PRACTICAL

Grade	Percentage of Marks	Grade Points
AA	85 ≤ Marks ≤ 100	10
AB	80 ≤ Marks < 85	9
BB	75 ≤ Marks < 80	8
BC	70 ≤ Marks < 75	7
CC	65 ≤ Marks < 70	6
CD	60 ≤ Marks < 65	5
DD	50 ≤ Marks < 60	4
FF	00 ≤ Marks < 50	0
ZZ	Absent in Examination	ô

15. Provisions of Ordinance No.18 of 2001 in respect of an Ordinance to provide grace marks for passing in a Head of passing and improvement of Division (Higher Class) and getting distinction in the subject and condonation of deficiency of marks in a subject in all the faculties prescribed by the Statute No.15 of 2017 and Ordinance No. 18 of 2001 shall apply to each examination under this Direction.

16. An examinee who does not pass or who fails to present himself/ herself for the examination shall be eligible for readmission to the same examination, on payment of fresh fees and such other fees as may be prescribed.

17. As soon as possible after the examination, the Board of Examinations shall publish a result of the examinees. The result of final MCA Examination shall be classified as above and meritlist shall be notified as per Ordinance No.6.

18. Notwithstanding anything to the contrary in this Direction, no person shall be admitted to an examination under this Direction, if he/she has already passed the same examination or an equivalent examination of any statutory University.

19. i) The examinees who have passed in all the subjects prescribed for all the examinations shall be eligible for award of the Degree of Master in Computer Application.

    ii) An examinee successful at the examination shall on payment of prescribed fees receive a degree in prescribed form signed by the Vice-Chancellor.

Date : 31 /08/2019

Sd/-
(Dr.M.G.Chandekar)
Vice-Chandekar

Sr.No.	Course Category	Subject Code No.	Subject	Credit	Teaching Schme			Hours /Week	Examination Scheme									
					Lectures	Tutorial	Practical		Theory					Practical				
									Duration of Paper (Hrs)	Max Marks Theory Papers	Max Marks Sessional	Total	Min Pass Marks	Duration of Exam (Hrs)	External Marks	Sessional Marks	Total	Min Pass Marks
			Curriculum Scheme for First Year MCA/P.G. Diploma in Computer Science and Technology															
			Semester - I															
1	Core	MCA19101/ PGDCS19101	Computer Organization and Architecture	4	4		-	4	3	80	20	100	40	-	-	-	-	-
2	Core	MCA19102/ PGDCS19102	Object Oriented Programming with C++	4	4		-	4	3	80	20	100	40	-	-	-	-	-
3	Core	MCA19103/ PGDCS19103	Mathematical Foundation	4	4		-	4	3	80	20	100	40	-	-	-	-	-
4	Elective	MCA19104/ PGDCS19104	Elective - 1	4	4		-	4	3	80	20	100	40	-	-	-	-	-
5	Choice Based	MCA19105/ PGDCS19105	Open Elective	4	-	2	4	6	-	-	-	-	-	3	-	50	50	25
6	Skill	MCA19106/ PGDCS19106	Lab-1: Based on C++	1	-	-	2	2						3	25	25	50	25
7	Skill	MCA19107/ PGDCS19107	Lab-2: Based on Mathematical Foundation	1	-	-	2	2	-	-	-	-	-	3	25	25	50	25
8	Skill	MCA19108/ PGDCS19108	Lab-3: Based on Web Technology	3	2	-	2	4	-	-	-	-	-	3	25	25	50	25
			Total	25	18	2	10	30		320	80	400			75	125	200	
			Semester-II															
1	Core	MCA19109/ PGDCS19109	Data Structure	4	4		-	4	3	80	20	100	40	-	-	-	-	-
2	Core	MCA19110/ PGDCS19110	Operating system	4	4		-	4	3	80	20	100	40	-	-	-	-	-
3	Core	MCA19111/ PGDCS19111	Data Base Management	4	4		-	4	3	80	20	100	40	-	-	-	-	-
4	Elective	MCA19112/ PGDCS19112	Elective - 2	4	4		-	4	3	80	20	100	40	-	-	-	-	-
5	Choice Based	MCA19113/ PGDCS19113	Open Elective	4	-	2	4	6	-	-	-	-	-	3	-	50	50	25
6	Skill	MCA19114/ PGDCS19114	Lab-4 Based on Data Structure	1			2	2						3	25	25	50	25
7	Skill	MCA19115/ PGDCS19115	Lab-5 Based on DBMS	1	-		2	2	-	-	-	-	-	3	25	25	50	25
8	Skill	MCA19116/ PGDCS19116	Lab-6 Based on Linux and Windows	3	2		2	4	-	-	-	-	-	3	25	25	50	25
			Total	25	18	2	10	30		320	80	400			75	125	200	

Elective -1	Elective - 2
System Analysis and Design	E-Commerce
Management Information System	Operation Research
Accounting and Financial Mgt.	Software Project Management

The Open Elective and Credit Assigned	Credits
Successful completion of Online Course of 4 weeks	4
Project acivity	4
Seminar Activity	1
Paper/poster presentation	1
Completion of softskill programme of one week	1
Internship of 30 Hrs	2
Field Visit of 15 Hrs	1
Startup recognized and approved by the department	2
Participation in Unnat Bharat Abhiyan	1 for 15 days, maximum 4
Yoga Meditation camp of 1 week	1
Completion of course/activity of similar credits proposed by the department from among the available courses/activities from other department/faculty in the college/university	4

Curriculum Scheme for Second Year MCA

Sr.No.	Course Category	Subject Code No.	Subject	Credit	Teaching Scheme			Hours / Week	Examination Scheme									
					Lectures	Tutorial	Practical		Theory					Practical				
									Duration of Paper (Hrs)	Max Marks Theory Papers	Max Marks Sessional	Total	Min Pass Marks	Duration of Exam (Hrs)	External Marks	Sessional Marks	Total	Min Pass Marks
			Semester - III															
1	Core	MCA19201	Java Programming	4	4		-	4	3	80	20	100	40	-	-	-	-	-
2	Core	MCA19202	Data Communication Network	4	4		-	4	3	80	20	100	40	-	-	-	-	-
3	Core	MCA19203	Design and Analysis of algorithms	4	4		-	4	3	80	20	100	40	-	-	-	-	-
4	Elective	MCA19204	Elective - 3	4	4		-	4	3	80	20	100	40	-	-	-	-	-
5	Choice Based	MCA19205	Open Elective	4	-	2	4	6	-	-	-	-	-	3	-	50	50	25
6	Skill	MCA19206	Lab-7: Based on Java	1	-	-	2	2	-	-	-	-	-	3	25	25	50	25
7	Skill	MCA19207	Lab-8: Based on DAA	1	-	-	2	2	-	-	-	-	-	3	25	25	50	25
8	Skill	MCA19208	Lab-9: Based on Software Testing	3	2	-	2	4	-	-	-	-	-	3	25	25	50	25
			Total	25	18	2	10	30		320	80	400			75	125	200	
		Semester-IV																
1	Core	MCA19210	Client Server Computing	4	4		-	4	3	80	20	100	40	-	-	-	-	-
2	Core	MCA19211	Artificial Intelligence and Applications	4	4		-	4	3	80	20	100	40	-	-	-	-	-
3	Core	MCA19212	Data Warehouse and Data Mining	4	4		-	4	3	80	20	100	40	-	-	-	-	-
4	Elective	MCA19213	Elective - 4	4	4		-	4	3	80	20	100	40	-	-	-	-	-
5	Choice Based	MCA19214	Open Elective	4	-	2	4	6	-	-	-	-	-	3	-	50	50	25
6	Skill	MCA19215	Lab-10 Based on Client server Computing	1	-		2	2	-	-	-	-	-	3	25	25	50	25
6	Skill	MCA19216	Lab-11 Based on AI and Applications	1	-		2	2	-	-	-	-	-	3	25	25	50	25
7	Skill	MCA19217	Lab-12 Based on Elective-4	2	-		4	4	-	-	-	-	-	3	25	25	50	25
			Total	24	16	2	12	30		320	80	400			75	125	200	

Elective -3		Elective - 4	The Open Elective and Credit Assigned	Credits
MIS Framework and Implementation		Computer Graphics and Multimedia	Successful completion of Online Course of 4 weeks	4
Managerial Economics		Cyber security and Digital Forensic	Project acivity	4
Object Oriented Analysis and Design		Visual Programming	Seminar Activity	1
		Cloud Computing	Paper/poster presentation	1
			Completion of softskill programme of one week	1
			Internship of 30 Hrs	2
			Field Visit of 15 Hrs	1
			Startup recognized and approved by the department	2
			Participation in Unnat Bharat Abhiyan	1 for 15 days, maximum 4
			Yoga Meditation camp of 1 week	1
			Completion of course/activity of similar credits proposed by the department from among the available courses/activities from other department/faculty in the college/university	4

						Teaching Schme		Hours /Week	Examination Scheme									
Sr.No.	Course Category	Subject Code No.	Subject	Credit	Lectures	Tutorial	Practical		Theory					Practical				
									Duration of Paper (Hrs)	Max Marks Theory Papers	Max Marks Sessional	Total	Min Pass Marks	Duration of Exam (Hrs)	External Marks	Sessional Marks	Total	Min Pass Marks

Curriculum Scheme for Third Year MCA

Sr.No.	Course Category	Subject Code No.	Subject	Credit	Lectures	Tutorial	Practical	Hours /Week	Duration of Paper (Hrs)	Max Marks Theory Papers	Max Marks Sessional	Total	Min Pass Marks	Duration of Exam (Hrs)	External Marks	Sessional Marks	Total	Min Pass Marks
			Semester - V															
1	Core	MCA19301	Mobile Application Development	4	4		-	4	3	80	20	100	40	-	-	-	-	-
2	Core	MCA19302	Software Engineering	4	4		-	4	3	80	20	100	40	-	-	-	-	-
3	Core	MCA19303	Distributed Systems	4	4		-	4	3	80	20	100	40	-	-	-	-	-
4	Elective	MCA19304	Elective - 5	4	4		-	4	3	80	20	100	40	-	-	-	-	-
5	Choice Based	MCA19305	Open Elective	4	-	2	4	6	-	-	-	-	-	3	-	50	50	25
6	Skill	MCA19306	Lab-13: Based on Mobile Application Development	1	-		2	2	-	-	-	-	-	3	25	25	50	25
7	Skill	MCA19307	Lab-14: Based on Distributed Systems	1			2	2	-	-	-	-	-	3	25	25	50	25
7	Skill	MCA19308	Lab-15: Based on Elective-5	2	-		4	4	-	-	-	-	-	3	25	25	50	25
			Total	24	16	2	12	30		320	80	400			75	125	200	
			Semester-VI															
1	Skill	MCA19308	Industry Project and Internship/Startup	18	-		-	24	-	-	-	-	-	3	200	50	250	125
2	Skill	MCA19309	Seminar/Presentation	6	-		-	6	-	-	-	-	-	3	25	25	50	25
			Total	24	0		0	30		0	0	0			225	75	300	

Elective -5
Data Analytics
Bio-Informatics
Game Programming
Internet of Things

The Open Elective and Credit Assigned	Credits
Successful completion of Online Course of 4 weeks	4
Project acivity	4
Seminar Activity	1
Paper/poster presentation	1
Completion of softskill programme of one week	1
Internship of 30 Hrs	2
Field Visit of 15 Hrs	1
Startup recognized and approved by the department	2
Participation in Unnat Bharat Abhiyan	1 for 15 days, maximum 4
Yoga Meditation camp of 1 week	1
Completion of course/activity of similar credits proposed by the department from among the available courses/activities from other department/faculty in the college/university	4