

**GUJARAT UNIVERSITY,  
AHMEDABAD - 380009**

**CHOICE BASED CREDIT  
SYSTEM (CBCS)**

**Ordinances and Regulations**

**(For the PG - M. Sc.  
Regular Programmes)**

(For the candidates to be admitted from the  
academic year 2010 - 2011 onwards)

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**Ordinances for M.Sc. = O. M.Sc. & Regulations for M.Sc. = R. M. Sc.**

**O. M. Sc. 1. Eligibility:**

**I For Admission:** A pass in the B.Sc. Examination with relevant Science Subject, conducted by Gujarat University, or any other University, accepted as equivalent thereto by the Executive Council/MHRD, India, subject to such conditions as may be prescribed therefor. The university will follow the criteria for admissions with reference to the minimum marks or its equivalent grade for various categories of students, as prescribed by the Government of Gujarat/UGC/MHRD and accepted by the Executive Council of Gujarat University.

**II** A candidate who has passed any examination of M.Sc. from any other University except Gujarat University shall be eligible for admission only to the first Semester if the M.Sc. programme of Gujarat University as a fresh student. However, in such situation the grades and credits obtained outside Gujarat University will not be considered for award of M.Sc. degree.

**III** A candidate who has obtained M. Sc. degree of Gujarat University in one area of specialization will not be eligible to appear in the M. Sc. degree examinations with another specialization as a regular student.

**IV** In case the student is not able to clear the programme till the expiry of the registration and wishes to continue with the program, he/she shall re-register in the programme as a fresh student, as per Provision - (I).

**V** A candidate once registered as a Regular candidate in the programme shall not be allowed to switch over to the external programme in the same academic year.

**VI** In case a candidate drops out of the programme voluntarily for any reason whatsoever and opts to join any other programme by obtaining a Transfer and / or Migration Certificate, the registration of the candidate in the M. Sc. programme would be automatically cancelled.

**VII For the M.Sc. Degree :** The candidates shall have subsequently undergone the prescribed course of study in the university department or a college affiliated to this University or a recognized Institute for a period of not less than two academic years, passed the examinations prescribed and fulfilled such conditions as have been prescribed therefor.

### **O. M. Sc. 2. Duration :**

The P.G. M.Sc. Programme is for a period of two years. Each academic year shall comprise of two semesters viz. Odd and Even semesters. Odd semesters shall be from June / July to October / November and Even Semesters shall be from November / December to April / May. There shall be not less than 90 working days which shall comprise 450 teaching clock hours for each semester. (Exclusive of the days for the conduct of University or external end-semester examinations). A candidate can avail a maximum of 10 Semesters (5 Years), in a continuous stretch of 5 Years from the date of admission to complete Masters's Degree

### **O. M. Sc. 3. Subjects offered at P. G. M. Sc. Programme :**

Mathematics	Statistics	Physics
Chemistry	Botany	Zoology
Geology	Forensic Science	Electronics
Bio-Chemistry	Microbiology	Biotechnology
Environmental Sciences	Life Science	Human Genetics
Biomedical Technology	Bioinformatics	Climate Change
Clinical Research	Mobile Technology, IT IMS , Animation	
Horticulture Science		

And P.G. Diploma/Certificate in Science Subjects

### **O. M. Sc. 4. The CBCS System :**

All Programmes shall be run on **Choice Based Credit System (CBCS)**. It is an instructional package developed to suit the needs of students to keep pace with the developments in higher education and the quality assurance expected of it in the light of liberalization and globalization in higher education.

### **O. M. Sc. 5. (a) Courses in Programmes :**

The PG M.Sc. - programme consists of a number of courses. The term 'course' is applied to indicate a logical part of the subject matter of the programme and is invariably equivalent to the subject matter of a "paper" in the conventional sense. The following are the various categories of Courses suggested for the PG M. Sc. - programmes. Elective Courses (FCs), Core Courses, Subject Elective Courses (SECs), Practical Courses and Such Other courses deemed necessary for the programme.

The above courses (including practical courses).shall be distributed in all M.Sc. Programmes/Semesters so as to keep the number of courses per semester, uniformly six and the credits per semester, uniformly twenty four. However, in the fourth semester, the number of courses may be reduced to accommodate the dissertation/project work/Industrial Training etc. as per the requirement of Subjects of M.Sc. programme.

#### **O. M. Sc. 5. (b) Practical Batch**

For Semester. I to IV, each practical batch should not have more than 12 students. This is because practicals in Science Subjects require individual attention for imparting correct and adequate hands – on training to the students.

#### **O. M.Sc. 6 Extension and Extra-Curricular Activities:**

These should be carried out outside the class hours. e.g. Field Work, participation in Seminars/ Youth Welfare activities/Sports at National or International Level, will be assigned two additional credits/year. (May be implemented later)

#### **O. M.Sc. 7. Semesters :**

An academic year is divided into two semesters. In each semester, courses are offered in 15 teaching weeks and the remaining 5 weeks are to be utilized for conduct of examinations and evaluation purposes. Each week has 30 working hours spread over 5 / 6 days a week.

#### **O. M.Sc. 8. Credits :**

The term ‘Credit’ refers to the weightage given to a course, usually in relation to the instructional hours assigned to it. For instance, a Twelve Instructional hour course of practicals for sem. I & IV per week is assigned Four Credits. Four hour Theory course per week is given Four Credits. The major dissertation in the fourth semester, shall carry the weightage of Sixteen Credits. The dissertation/Term Work/Industrial Training/Seminars/Project etc. offered in fourth semester in some M.Sc Programmes shall carry the credit weightage as described by the respective Board of Studies of the said Subject.

The total minimum Credits, required for completing a PG M. Sc. programme is 96.

#### **O. M.Sc. 9. Course :**

Each Course is to be designed variously under lectures / tutorials / laboratory or field work / seminar / practical training / assignments / term paper or report writing etc., to meet effective teaching and learning needs.

**O. M.Sc. 10. Examinations :**

(i.) There shall be examinations at the end of each semester, for odd semesters in the month of October / November; for even semesters in April / May. A candidate who does not pass the examination in any course(s) shall be permitted to appear in such failed course(s) in the subsequent examinations to be held in October / November or April / May.

(ii.) A candidate should get enrolled/registered for the first semester examination. If enrollment/registration is not possible owing to shortage of attendance beyond condonation limit / regulations prescribed OR belated joining OR on medical grounds, the candidates are not permitted to move to the next semester. Such candidates shall re-do the semester in the subsequent turn of that semester as a regular student ; However, a student of First Semester shall be admitted in the Second Semester, if he/she has successfully kept the term in first semester. To move in the Third Semester, a student has to clear all Credits of first semester. Like wise, to move in the Fourth Semester, a student is required to obtain all the credits of second semester.

For the movement in the said semester as described above, the candidate must have satisfactorily kept the term of the previous semester.

**O. M.Sc. 11. Condonation :**

Students must have 75% of attendance in each course for appearing in the examination. Students who have 74% to 65% of attendance shall apply for condonation in the prescribed form with the prescribed fee(Rs.100/Corse). Students who have 64% to 50% of attendance shall apply for condonation in prescribed form with the prescribed fee along with the Medical Certificate. Students who have below 50% of attendance are not eligible to appear for the examination. It is furthered clarified that the students, who have 75% or more of attendance shall be given five out of five marks in internal evaluation. Students (if condoned), who have 74% to 65% of attendance shall be given 3 to 4 marks in internal evaluation. Students (if condoned), who have 64% to 50% of attendance shall be given 1 to 2 marks in internal evaluation.(As per O.M.Sc. 13 )

**O. M.Sc. 12. Question Paper Pattern :**

Question Paper shall have four questions corresponding to four units of each theory course. Question No. 5 shall have objective type of questions to be asked from all the four units of the theory course by giving equal weightage.

**O. M. Sc. 13. Evaluation :**

The performance of a student in each course is evaluated in terms of percentage of marks with a provision for conversion to grade points. Evaluation for each course shall be done by a continuous internal assessment (CIA) by the concerned course teacher as well as by an end semester examination and will be consolidated at the end of the course. The components for continuous internal assessment are :

One Tests	15 Marks (Second / repeat test for genuine absentees)
Seminar / Quiz	5 Marks
Assignments	5 Marks
Attendance	5 Marks
Total	30 Marks

Attendance shall be taken as a component for continuous assessment, although the students should put in a minimum of 75% attendance in each course(except 0.M.Sc.11). In addition to continuous evaluation component, the end semester examination, which will be a written-type examination of at least 3 hours duration, would also form an integral component of the evaluation. The ratio of marks to be allotted to continuous internal assessment and to end semester examination is 30 : 70. The evaluation of laboratory component, wherever applicable, will also be based on continuous internal assessment and on an end-semester practical examination.

**O. M.Sc. 14. Passing Minimum :**

The passing minimum for CIA (Continues Internal Assessment) shall be 36% out of 30 marks (i.e. 11 marks), where the candidate is required to appear for the internal test at least once. Failed candidates in the Internal Assessment are permitted to improve their Internal Assessment marks in the subsequent semesters ( 2 chances will be given) by writing test and by submitting Assignments. The passing minimum for University or External Examinations shall be 36% out of 70 marks (i.e. 25 marks)

**O. M.Sc. 15. Grading :**

Once the marks of the CIA (Continues Internal Assessment) and end-semester examinations for each of the courses are available, they will be added. The marks thus obtained will then be graded as per details provided in R. B. Sc. 3. From the First semester onwards the total performance within a semester and continuous performance starting from the first semester are indicated respectively by Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA). These two are

calculated by the following formulae :

$$SGPA = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

where ‘Ci ‘ is the Credit earned for the Course i in any semester ; ‘Gi’ is the Grade Point obtained by the student for the Course i and ‘n’ is the number of Courses passed in that semester.

CGPA = SGPA of all the Courses starting from the first semester to the current semester.

**O. M.Sc. 16. Classification of Final Results :**

For purposes of declaring a candidate to have qualified for the Degree of Master of Science in the First class/Second class/Pass class or First class with Distinction, the marks and the corresponding CGPA earned by the candidate in Core Courses will be the criterion.. It is further provided that the candidate should have scored the First/Second Class separately in both the grand total and end Semester (External) examinations.

**O. M.Sc. 17. Conferment of the Master's Degree :**

- (i) A candidate shall be eligible for the conferment of the Degree of Master of Science only if he/she has earned the minimum required credits for the programme prescribed therefor (i.e. 96 credits).
- (ii) A candidate shall be required to pay Rs.500/- towards the conferment of the Degree of M. Sc., which shall be enhanced by a 10% increase every three years and rounded off to the next 10/- rupees stage.

**O. M.Sc. 18. End Semester Examinations :**

- (i) The University shall conduct the External (End Semester) Examinations for the Semester I and IV.
- (ii) The examination fees for all end semester examinations shall be Rs.500/- for all subjects, which shall be enhanced by a 10% increase every three years and rounded off to a next 10/- rupees stage.

**O. M.Sc. 19. Self-Financing Stream :**

The above Ordinances shall be applicable also for the candidates undergoing the programmes in Self-Financing Stream.

**O. M.Sc. 20. Grievance Redressal Committee :**

The University Departments or P.G. Centers of the Affiliating Colleges or Recognized Institutes, shall form a Grievance Redressal Committee for each course in each department with the Course Teacher and the HOD as the members. This Committee shall solve all grievances relating to the Internal Assessment marks of the students.

**O. M.Sc. 21. Transfer of Credits :**

In case of Elective and Subject Elective Courses & Project or Dissertation, carried out by the Students outside the Department or recognized P.G. Centers, they are permitted to earn such course credits.

**O. M.Sc. 23. Revision of Ordinances, Regulations and Curricula :**

The University may from time to time revise, amend and change the Ordinances, the Regulations and the Curricula, if found necessary. The existing ordinances for passing the examination/ paper for annual pattern of courses shall also remain effective for the CBCS programmes.

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### R. M. Sc. 1 - Grading of the Courses

<b>Percentage / Marks (Normalized)</b>	<b>Grade Points</b>	<b>Grade</b>	<b>Description</b>
Above 85	8.5 – 10.0	O+	Outstanding
70 – 84.99	7.0 – 8.49	O	Excellent
60 – 69.99	6.0 – 6.99	A	Very good
55 – 59.99	5.5 – 5.99	B+	Good
48 – 54.99	4.8– 5.49	B	Fair
36 – 47.99	3.6 – 4.79	C	Average
Below 36	0.0	D ( Dropped)	Dropped or Fail

### R. M. Sc. 4 - Final Result

CGPA From-to	Letter Grade	Classification of Final Result
8.5-10	O+	First class with Distinction
7.0-84.99	O	
6.0-6.99	A	First Class
5.5-5.99	B+	Higher Second Class
4.8-5.49	B	Second Class
3.6-4.79	C	Pass Class
Below 3.6 -o.o	D	Dropped or Fail



### **R. M. Sc. 3 – Course Structure :**

- I. The M.Sc. programme is full time two years Post Graduate Programme. The medium of instruction shall be English. However, the students are allowed to write the answers in Gujarati in the examinations.
- II. The programme consists of Four Semesters-Semester I and II in the First Year of the Programme and Semesters III and IV in the Second Year of the programme.
- III. The total programme consists of 96 credits equally divided into 24 credits per semester.
- IV. There would be different elective areas of specialization as per syllabus of respective subject.
- V. The programme consists of the following types of courses
  - (i) Core courses: common for all optional specialization groups.
  - (ii) Elective course & SECs: separate for all optional specialization groups.

### **R. M.Sc 4- Clearing and carrying forward the Semesters :**

Rules for carrying forward the semesters are :

- I. A candidate must have at least 75% overall attendance in the programme(As explained in O.M.Sc.11) and should have satisfactory performance in class participation of each course and must have appeared in internal written test to be eligible for grant of term.
- II. In case, a candidate obtains D in any one course/ all courses in the first semester, he/she shall be allowed to continue to proceed to the second semester provided he/she has kept his/her term of the first semester successfully.
- III. The candidate shall be allowed to proceed to the third semester only after clearing all the courses of the first semester.
- IV. In case, a candidate obtains D in any one course/ all courses in the second semester, he/she shall be allowed to continue to proceed to the third semester provided he /she has kept his/her term of the second semester successfully.
- V. The candidate shall be allowed to proceed to the fourth semester only after clearing all the courses of the second semester.

- VI. In case a candidate obtains D in any one course/ all courses in the third semester, he/she shall be allowed to continue to proceed to the fourth semester provided he/she has kept his/her term of the third semester successfully.
- VII. The candidate shall be eligible for the award of the degree after successful clearance of all the courses of semester I, II, III& IV by the fourth semester examination of the second year programme or till expiry of registration/enrolment.
- VIII. When ever a candidate fails in a course due to failure of obtaining minimum marks in the internal component of the examination, the marks obtained in attendance and class participation shall be carried forward for the consideration of the repeat examination. The student has to appear in the internal test only to complete the requirement of the internal assessment.

#### **R. M.Sc. 5- Assessment and Evaluations :**

- I. Each course will be assessed on the basis of 100 marks. The marks would be divided between internal and external assessment.
- II. There shall be one end semester external examination of each course in every semester consisting of 70% (70 marks) weightage in theory and practical courses.
- III. Each Theory & Practical course shall have internal assessment of 30% waightage based on the following
  - Internal written test - 15% (15 marks)
  - Attendance - 05% (5 marks)
  - Class participation in assignments- 05% (5 marks)
  - Presentations (Seminars)/quizzes etc. - 05% (5 marks)
- IV. Every student will be required to pass the external examination and internal assessment separately in each course.
- V. The minimum passing standard will be 36% for the external and internal component of each course, i.e. 25 marks out of 70 (external -36% of 70 marks) and 11 marks out of 30 (internal -36% of 30 marks).

**VI.(A)** The grades for each course would be decided on the basis of the percentage marks obtained in the end-semester external and internal examinations as per following table:

<b>Percentage / Marks (Normalized)</b>	<b>Grade Points</b>	<b>Grade</b>	<b>Description</b>
Above 85	8.5 – 10.0	O+	Outstanding
70 – 84.99	7.0 – 8.49	O	Excellent
60 – 69.99	6.0 – 6.99	A	Very good
55 – 59.99	5.5 – 5.99	B+	Good
48 – 54.99	4.8– 5.49	B	Fair
36 – 47.99	3.6 – 4.79	C	Average
Below 36	0.0	D ( Dropped)	Dropped or Fail

**VI.(B) Final Result :**

CGPA From-to	Letter Grade	Classification of Final Result
8.5-10	O+	First class with Distinction
7.0-84.99	O	
6.0-6.99	A	First Class
5.5-5.99	B+	Higher Second Class
4.8-5.49	B	Second Class
3.6-4.79	C	Pass Class
00-00	D	Dropped or Fail

VII. The semester grade point average (SGPA) will be calculated as an weighted average of all the grade point of the semester courses. That is Semester grade point average (SGPA) = (sum of grade points of all six courses of the semester)/ total credit of the semester as per example given below :

<b>Semester – I</b>					
<b>Course No.</b>	<b>Credit</b>	<b>Marks out of 100(%)</b>	<b>Grade</b>	<b>Grade Point</b>	<b>Credit Grade point</b>
CORE COURSE-1	<b>4</b>	<b>65</b>	<b>A</b>	<b>6.5</b>	<b>26</b>
CORE COUSE-2	<b>4</b>	<b>60</b>	<b>A</b>	<b>6.0</b>	<b>24</b>
Core Course-3	<b>4</b>	<b>62</b>	<b>A</b>	<b>6.2</b>	<b>24.8</b>
Core Course – 4	<b>4</b>	<b>57</b>	<b>B+</b>	<b>5.7</b>	<b>22.8</b>
Core Course - 5 Practical	<b>4</b>	<b>55</b>	<b>B+</b>	<b>5.5</b>	<b>22</b>
Core Course – 6 Practical	<b>4</b>	<b>72</b>	<b>O</b>	<b>7.2</b>	<b>28.2</b>
<b>Total</b>	<b>24</b>				<b>147.8</b>

**Examples : Conversion of marks into grade points**

$$65 = 60 + 5 = 6.0 + 5 \times (0.99 / 9.99) = 6.0 + 5 \times 0.1 = 6.0 + 0.5 = 6.5$$

$$57 = 55 + 2 = 5.5 + 2 \times (0.49 / 4.99) = 5.5 + 2 \times 0.1 = 5.5 + 0.2 = 5.7$$

$$72 = 70 + 2 = 7.0 + 2 \times (1.49 / 14.99) = 7.0 + 2 \times 0.1 = 7.0 + 0.2 = 7.2$$

VIII. SEMESTER GRADE POINT AVERAGE (SGPA) = Total Credit Grade

$$\text{Points} = 147.8 / 24 = 6.16$$

$$\text{SGPA Sem. I} = 6.16$$

$$\text{SGPA Sem. II} = 5.63$$

$$\text{SGPA Sem. III} = 6.01$$

$$\text{SGPA Sem. IV} = 5.50$$

$$\text{Total SGPA} = 23.30$$

$$\text{Cumulative Grade Point Average (CGPA)} = 23.30 / 4 = 5.82$$

$$\text{CGPA} = 5.82 \quad \text{Grade} = \text{B+} \quad \text{Class} = \text{Higher Second Class}$$

$$\text{GPA} \times 10 = \text{Percentage} \quad \text{e.g. } 5.82 \times 10 = 58.2 \%$$

**Note:** (1)SGPA is calculated only if the candidate passes in all the courses i.e. get minimum C grade in all the courses.

(2) CGPA is calculated only when the candidate passes in all the courses of all the semesters

IX. The cumulative grade point average will be calculated as the average of the SGPA of all the four semesters, as shown above.

X. For the award of the class, CGPA shall be calculated on the basis of :

**(a) Marks of End Semester External Examination**

**And**

**(b) Total Marks obtained (Marks of End Semester External Examination + Marks of Internal Assessment)** for each course. The final Class for M. Sc. Degree shall be awarded on the basis of lowest CGPA (marks) of ( a ) & ( b ) of one to fourth semester examinations.

#### **R. M.Sc. 6 – Revision of Syllabi :**

- I. Syllabi of every course should be preferably revised every two years. For example, a syllabus revised in 2011 must be revised in 2013.
- II. Revised Syllabi of each semester should be implemented in sequential way.
- III. In courses, where units/topics relate to governmental provisions, regulations or laws, changes to accommodate the latest developments, are to be made automatically under the information to the Academic and Executive Councils of Gujarat University.
- IV. All formalities for revisions in the syllabi should be completed before the end of the 2nd/4th semester for implementation in the next academic year.
- V. During every revision, up to twenty percent of the syllabi of each course should be changed so as to ensure the appearance in the examinations of revised syllabi for those students, who have studied the old (unrevised) syllabi without any difficulties.
- VI. In case, the syllabus of any course is carried forward without any revision, it shall also be included in the revised syllabi.

**R. M. Sc.7– Format of Question paper :**

Q.1 From Unit -1	A OR A	7 marks
	B OR B	7 marks
Q.2 From Unit -II	A OR A	7 marks
	B OR B	7 marks
Q.3 From Unit -III	A OR A	7 marks
	B OR B	7 marks
Q.4 From Unit -III	A OR A	7 marks
	B OR B	7 marks
Q.5 shall be	14 questions of 1 mark each. There should be atleast 3 questions of 1 mark each from all the 4 units, remaining 2 questions of 1 mark can be from any unit	

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