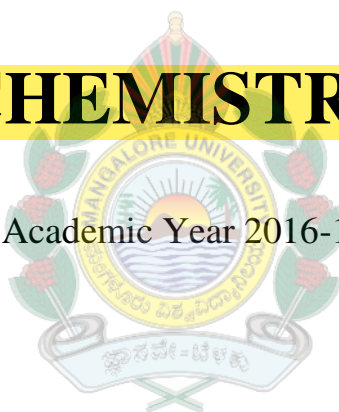


Mangalore University
Department of Studies in Chemistry
M. Sc. Degree Programmes
(CHOICE BASED CREDIT SYSTEM – SEMESTER SCHEME)

Syllabi for M.Sc., Courses in

CHEMISTRY

(From the Academic Year 2016-17 onwards)



Mangalore University
M. Sc. Degree Programme in Chemistry:
CHOICE BASED CREDIT SYSTEM (CBCS) SEMESTER SCHEME

COURSE PATTERN AND SCHEME OF EXAMINATION

(Year 2016-2017 onwards)

PREAMBLE

Revision of Syllabi for the Two years Master Degree (Choice Based Credit System- Semester Scheme) Programmes in Chemistry, Applied Chemistry, Organic Chemistry and Analytical Chemistry.

PG BOS in Chemistry has revised and prepared the Syllabi (CBCS based) for all the Four Courses -Chemistry, Applied Chemistry, Organic Chemistry and Analytical Chemistry in its meeting held on 24th July 2014 and the University implemented it from the same academic year. Now the University has asked the PG BOS in Chemistry to revise the syllabi by giving certain Guidelines (Ref:-No: MU/ACC/CR.38/ CBCS (PG)/2015-16 dt.05-05-2016 bse on UGC letter) for all the four Courses (Programmes) to offer Hard Core, Soft Core and Open Elective courses with credits to each course amounting to 92 credits for the entire programme.

Accordingly, the PG BOS in Chemistry prepared the syllabi for all the four programmes. It has prepared course pattern by proposing 12 Hard Core theory courses (3 in each semester) and 5 practical courses (in 3rd and 4th semester), one Project work (in 4th Semester with 4 credits) with a provision to have One Project Work in lieu of one of the practicals in 4th semester in each programme with 3 credits each (project work - 4 credits) with total of **55 Credits**). BOS is offering 3, 2, 2 and 3 (Total 10 courses) Soft core courses respectively in 1st, 2nd, 3rd and 4th semesters of a programme. Student shall opt any 2, 1, 1 and 2 (Total 6 courses) courses respectively in 1st, 2nd, 3rd, 4th Semesters. All the soft core courses are of 3 credits. Programme consists of 6 Soft Core practical courses (3 courses each in 1st and 2nd semesters of the Programme with 2 credits each) with a total of **30 credits** (6 theory x 3 credits + 6 practicals x 2 credits). BOS has also proposed 2 open electives (1 each in 2nd & 3rd Semesters of the programme) with 3 credits each (**6 credits**). All together **total credits** come to 91 from teaching. I have prepared a draft course pattern by considering all the points mentioned in the above said letter from the Registrar and placing it before the BOS meeting.

Detailed syllabi for 1st and 2nd Semesters are prepared and enclosed, whereas the syllabi for the 3rd and 4th Semesters will be prepared in forthcoming BOS meeting.

Course/credit pattern:

Semester Credits	Hard Core(H)(T)	Soft Core (S)(T)	Elective E)(T)	Practical	Tutorial	Total Credits
First	9	6	--	6 (S)	--	21
Second	9	3	3	6 (S)	--	21
Third	9	3	3	9 (H)	--	24
Fourth	9	6	--	10(H)	--	25
Total	36	18	6*	12(S) + 19(H)	--	91

Total Credits from all the Four Semesters (1st, 2nd, 3rd and 4th) : 21+21+24+25 = 91

Total Hard Core credits = 36 (T) + 19 (P) = 55 = 60.4%

Total Soft Core credits = 18 (T) + 12(P) = 30 = 33.0%

*Open Elective Credits = 6 = 6.6% (Not to considered for calculating the

CGPA) H= Hard Core, S= Soft Core, P =Practical/Project



Consolidated Course code and title
Programme: M.Sc. in Chemistry

1st Semester

2nd Semester

Course Code	Course Title	Course Code	Course Title
CH H 401	Inorganic Chemistry	CH H 451	Advanced Inorganic Chemistry
CH H 402	Organic Chemistry	CH H 452	Advanced Organic Chemistry
CH H 403	Physical Chemistry	CH H 453	Advanced Physical Chemistry
CH S 404 Or CH S 405	Inorganic Spectroscopy and Analytical Techniques Or Environmental Chemistry	CH S 454 Or CH S 455	Organic Spectroscopic Techniques Or Chemistry of Bio-molecules
CH S 406	Molecular Spectroscopy and Diffraction Techniques	CH E 456	Environmental, Electro- and Polymer Chemistry
CH P 407	Inorganic Chemistry Practicals-1	CH P 457	Inorganic Chemistry Practicals-II
CH P 408	Organic Chemistry Practicals-1	CH P 458	Organic Chemistry Practicals-II
CH P 409	Physical Chemistry Practicals-1	CH P 459	Physical Chemistry Practicals-II

3rd Semester

4th Semester

CH H 501	Coordination Chemistry	CH H 551	Bioinorganic Chemistry
CH H 502	Organic Reaction Mechanism and Heterocyclic Chemistry	CH H 552	Organic Synthetic Methods
CH H 503	Solid State Chemistry	CH H 553	Electrochemistry and Reaction Dynamics
CH S 504 Or CH S 505	Medicinal & Natural Product Chemistry Or Bioorganic Chemistry	CH S 554	Organometallic Chemistry
CH E 506	Analytical and Green Chemistry	CH S 555 Or CH S 556	Polymer Chemistry Or Nuclear, Radiation & Photochemistry
CH P 507	Inorganic Chemistry Practicals-III	CH P 557	Inorganic Chemistry Practicals-IV
CH P 508	Organic Chemistry Practicals-III	CH P 558	Physical Chemistry Practicals-IV
CH P 509	Physical Chemistry Practicals-III	CH P 559	Project Work & Dissertation

Detailed distribution of Course &Credits:

Programme: **Chemistry:**

1st Semester

Course Code	Course Title	No of UNITs	Evaluation IA + Exam	Teaching hr week Sem	Exam Hrs	Credits
CH H 401	Inorganic Chemistry	3	30 + 70	3 45	3	3
CH H 402	Organic Chemistry	3	30 + 70	3 45	3	3
CH H 403	Physical Chemistry	3	30 + 70	3 45	3	3
CH S 404 Or CH S 405	Inorganic Spectroscopy and Analytical Techniques Or Environmental Chemistry	3 3	30 + 70 30 + 70	3 36 3 36	3	3
CH S 406	Molecular Spectroscopy and Diffraction Techniques	3	30 + 70	3 36	3	3
CH P 407	Inorganic Chemistry Practicals-1	4 Hrs	30 + 70	4	4	2
CH P 408	Organic Chemistry Practicals-1	4 Hrs	30 + 70	4	4	2
CH P 409	Physical Chemistry Practicals-1	4 Hrs	30 + 70	4	4	2

Total credits from 1st Semester: **21** (Hard Core-9, Soft Core-12)

2nd Semester

Course Code	Course Title	No of UNITs	Evaluation IA+ Exam	Teaching hr week Sem	Exam Hrs	Credits
CH H 451	Advanced Inorganic Chemistry	3	30 + 70	3 45	3	3
CH H 452	Advanced Organic Chemistry	3	30 + 70	3 45	3	3
CH H 453	Advanced Physical Chemistry	3	30 + 70	3 45	3	3
CH S 454 Or CH S 455	Organic Spectroscopic Techniques Or Chemistry of Bio-molecules	3 3	30+70 30 + 70	3 36 3 36	3	3
CH E 456	Environmental, Electro- and Surface Chemistry	3	30 + 70	3 36	3	3
CH P 457	Inorganic Chemistry Practicals-II	4 Hrs	30 + 70	4	4	2
CH P 458	Organic Chemistry Practicals-II	4 Hrs	30 + 70	4	4	2
CH P 459	Physical Chemistry Practicals-II	4 Hrs	30 + 70	4	4	2

3rd Semester

Course Code	Course Title	No of UNITS	Evaluation IA +Exam	Teaching hr week	Sem	Exam Hrs	Credits
CH H 501	Coordination Chemistry	3	30 + 70	3	45	3	3
CH H 502	Organic Reaction Mechanism and Heterocyclic Chemistry	3	30 + 70	3	45	3	3
CH H 503	Solid State Chemistry	3	30 + 70	3	45	3	3
CH S 504 Or CH S 505	Medicinal & Natural Product Chemistry Or Bioorganic Chemistry	3 3	30 + 70 30 + 70	3 3	36 36	3	3
CH E 506	Analytical & Green Chemistry	3	30 + 70	3	36	3	3
CH P 507	Inorganic Chemistry Practicals-III	6 Hrs	30 + 70	6		6	3
CH P 508	Organic Chemistry Practicals-III	6 Hrs	30 + 70	6		6	3
CH P 509	Physical Chemistry Practicals-III	6 Hrs	30 + 70	6		6	3

Total Credits = **24** (Hard Core-18, Soft Core-3 and Elective-3)

4th Semester

Course Code	Course Title	No of UNITS	Evaluation IA + Exam	Teaching hr week	Sem	Exam hrs	Credits
CH H 551	Bioinorganic Chemistry	3	30 + 70	3	45	3	3
CH H 552	Organic Synthetic Methods	3	30 + 70	3	45	3	3
CH H 553	Electrochemistry and Reaction Dynamics	3	30 + 70	3	45	3	3
CH S 554	Organ metallic Chemistry	3	30 + 70	3	36	3	3
CH S 555 Or CH S 556	Polymer Chemistry Or Nuclear, Radiation & Photochemistry	3 3	30 + 70 30 + 70	3 3	36 36	3	3
CH P 557	Inorganic Chemistry Practicals -IV	6 Hrs	30 + 70	6		6	3
CH P 558	Physical Chemistry Practicals -IV	6 Hrs	30 + 70	6		6	3
CH P 559	Project Work & Dissertation	8 Hrs	30 + 70	8		--	4

Total Credits = **25** (Hard Core-18, Soft Core-6 + Seminar- 1)

Total Credits: 21+21+24+25 = 91.