



UNIVERSITY OF CALICUT

Abstract

MSc programme in Chemistry under Credit Semester System (PG)- Scheme and Syllabus -approved –implemented-with effect from 2015 admission- Orders issued

G & A - IV - J

U.O.No. 10385/2015/Admn

Dated, Calicut University.P.O, 03.10.2015

- Read:-*1. U.O.No. GAIV/J1/1373/08 dated, 23.07.2010.
2. GA IV/J2/4684/10 dated 30 .07.2010
3. Item No.3 in the minutes of the meeting of the Board of Studies in Chemistry PG held on 26.05.2015
4. Approval of Dean, Faculty of Science dated 12.09.2015.
5. Orders of Vice Chancellor dated 22.09.2015

ORDER

As per University Order read as first, Credit Semester System was implemented to PG programmes in affiliated Arts and Science Colleges and Self Financing Centres of the University with effect from 2010 admission onwards.

Vide paper read as (2) the scheme and Syllabus of MSc programme in Chemistry with effect from 2010 admission has been implemented.

The Board of Studies in Chemistry PG, vide paper read as (3) approved the revised programme pattern, syllabus, distribution of credits and hours, scheme of evaluation, model question papers etc of MSc Chemistry programme w.e.f 2015 admission.

The Dean Faculty of Science has also approved the same vide paper read as (4).

Vide paper read as (5), The Vice-Chancellor has approved Item No.3 in the minutes of the meeting of the Board of Studies in Chemistry PG held on 26.05.2015 subject to ratification by the Academic Council.

Sanction has therefore been accorded for implementing the scheme and Syllabus of MSc programme in Chemistry with effect from 2015 admission.

Orders are issued accordingly.

Detailed Scheme and Syllabus is appended.

(Scheme and Syllabus is uploaded in Website)

Usha K
Deputy Registrar

To

The Principals of affiliated Colleges offering MSc programme in Chemistry

Copy to:

PS to VC, PA to Registrar, Chairman, B/S Chemistry, Pareeksha Bhavan

Forwarded / By Order

Section Officer

UNIVERSITY OF CALICUT
M.Sc. CHEMISTRY (CSS PATTERN)

Regulations and Syllabus with effect from 2015 admission

The Board of Studies in Chemistry (PG) at its meeting held on 30-12-2014 considered the revision of M.Sc. Chemistry syllabus under Credit Semester System (CSS) and resolved to implement the revised syllabus from 2015 admission onwards. The revised programme pattern; syllabus, distribution of credits and scheme of evaluation, etc. approved by the Board of studies in Chemistry (PG) at its meeting held on 26-05-2015 are given below:

Pattern of the Programme

- a) The name of the programme shall be M.Sc. Chemistry under CSS pattern.
- b) The programme shall be offered in four semesters within a period of two academic years.
- c) Eligibility for admission will be as per the rules laid down by the University from time to time.
- d) Details of the programme offered for the programme are given in Table 1. The programme shall be conducted in accordance with the programme pattern, scheme of examination and syllabus prescribed. Of the 25 hours per week, 12 hours shall be allotted for theory, 12 hours for practical and 1 hour for seminar.

Theory Courses

In the first three semesters there will be four theory courses and in the fourth semester three theory courses. All the theory courses in the first and second semesters are core courses. In the third semester there will be three core theory courses and one elective theory course. Colleges can choose any one of the elective courses given in the table 1. In the fourth semester there will be two core theory courses and one elective theory course. Colleges can select any one of the elective courses from those given in the table 1. However a student may be permitted to choose any other elective course in the third and fourth semesters, without having any lecture classes. Only one elective course chosen by the college both in the third and fourth semesters will be considered for calculating the workload of teachers. All the theory courses in the first, second and third semesters are of 3 credits while the theory courses in the fourth semester are of 4 credits

Practical Courses

In each semester, there will be three core practical courses. However the practical examinations will be conducted only at the end of second and fourth semesters. At the end of second semester, three practical examinations with the codes CH1PO1 & CH2PO4, CH1PO2 & CH2PO5 and CH1PO3 & CH2PO6 will be conducted. Practical examinations for the codes CH3PO7 & CH4P10, CH3PO8 & CH4P11 and CH3PO9 & CH4P12 will be conducted at the end of fourth semester. Each practical examination will be of six hour duration and 4 credits. Three hours per week in the fourth semester are allotted for conducting individual project work by the students under guidance of a faculty and it can be treated as practical hours while working out the workload of teachers.

Project and Viva Voce

Each student has to perform an independent research project work during the programme under the guidance of a faculty member of the college/ scientists or faculties of recognised research institutions. Projects done in the quality control or quality analysis division of the industries will not be considered. At the same time, projects done in the R & D division of reputed industry can be considered. Each student has to submit three copies of the project dissertation for valuation at the end of fourth semester. After the valuation one copy may be returned to the student, one may be given to the project supervisor and the third one should be kept in the department/college library. Evaluation of the project work (4 credits) will be done on a separate day at the end of fourth semester, after the theory examinations. Viva voce on the project will also be done on the same day.

Viva voce examinations, based on the theory and practical courses, will be conducted at the end of second and fourth semesters (2credits each), on a separate day.

Grading and Evaluation

(1) Accumulated minimum credit required for successful completion of the course shall be 80.

(2) A project work of 4 credits is compulsory and it should be done during the programme. However specific hours(3hours/week) are given in the IV semester, for project work. Project evaluation should be conducted by three external examiners, one each from inorganic chemistry, organic chemistry and physical chemistry area, at the end of IV semester, on a separate day.

Also comprehensive Viva Voce may be conducted by three external examiners, one each from inorganic chemistry, organic chemistry and physical chemistry area, at the end of II and IV Semesters on a separate day and carries 2 credits each.

(3) Evaluation and Grading should be done by direct grading system. All grading during the evaluation of courses and the semester is done on 5 point scale (A, B, C, D, E). Grading in 5 point scale is as given below.

Overall Grade in a course/Semester	
<i>GPA/SGPA</i>	<i>Overall Letter Grade</i>
3.50 to 4.00	A
2.50 to 3.49	B
1.50 to 2.49	C
0.50 to 1.49	D
0.00 to 0.49	E

Pass in a course: C grade and above(GPA 1.50 and above). Pass in all courses in a semester is compulsory to calculate the SGPA.

GPA, SGPA and CGPA – between 0 to 4 and in two decimal points. An overall letter grade (Cumulative Grade) for the whole programme shall be awarded to the student based on the value of CGPA using a 7-point scale given below.

Overall Grade in a Programme	
<i>CGPA</i>	<i>Overall Letter Grade</i>
3.80 to 4.00	A+
3.50 to 3.79	A
3.00 to 3.49	B+
2.50 to 2.99	B
2.00 to 2.49	C+
1.50 to 1.99	C
1.00 to 1.49	D

(4) Weightage of Internal and External valuation:

The evaluation scheme for each course shall contain two parts (a) internal evaluation (b) external evaluation. Its weightages are as follows:

<i>Evaluation</i>	<i>Weightage</i>
Internal	1 (or 25%)
External	3 (or 75%)

Both internal and external evaluation will be carried out using Direct Grading System, in 5 point scale

(5) Internal evaluation (must be transparent and fair):

Theory: 5 weightage

- a) Internal Examinations- weightage = 2 (2 internal exams, both should be considered)
- b) Assignments and Exercises- weightage =1

- c) Seminars and Viva Voce- weightage =1
- d) Attendance - weightage =1

Practical: 5 weightage

- a) Attendance - weightage =1
- b) Lab. skill/quality of their results- weightage =1
- c) Model practical test-weightage= 1 (Best one, out of two model exams is considered)
- d) Record – weightage = 1
- e) Viva Voce- weightage =1

Project: 5 weightage

- a) Literature survey and data collection -weightage=2
- b) Interpretation of data & Preparation of Project report - weightage =1
- c) Research attitude - weightage = 1
- d) Viva Voce- weightage =1

Project internal evaluation of each student should be done by the supervising faculty in the department.

Viva Voce: No internal evaluation for viva voce examinations (at the end of 2nd and 4th semesters).

Attendance: Above 90%: A, 85 – 89.99% : B, 80 – 84.99%: C, 75 -79.99%: D
Less than 75%: E

(6) External evaluation:

a) **Theory:** In all semesters the theory courses have 36 weightage each. Pattern of question Papers for theory courses is as follows

<i>Division</i>	<i>Type</i>	<i>No.of Questions</i>	<i>Weightage</i>	<i>Total Weightage</i>
Section A	Short Answer	12 (No Choice)	1	12
Section B	Short Essay	8 out of 12	2	16
Section C	Essay	2 out of 4	4	08
Total weightage in a question paper				36

b) **Practicals:** At the end of II and IV semesters. There will be three practical examinations at the end of second semester as well as at the end of fourth semester. Each examination has 15 weightage and 4 credits

c) **Viva Voce:** At the end of II and IV semesters on a separate day(2credits each). Viva voce will be based on both the theory and practical courses during the year.

c) **Project Evaluation:** End of IV semester on a separate day. Evaluation is based on:

- a) Significance and relevance of the project-weightage=3
- b) Project report - weightage =6
- c) Presentation- weightage = 3
- c) Viva Voce- weightage =3

Total weightage 15 and credit for project is 4.

(7) Directions for question paper setters:

Section A: Set each questions to be answered in 5 minutes duration.

Section B: 10 minutes answerable questions each. May be asked as a single question or parts.

Section C: 20 minutes answerable questions each. May be asked as a single question or parts.

While setting the question paper, all units in each theory courses must be given due consideration and should give equal distribution as possible.

(Further details regarding the grading and evaluation are as per the University PG regulations 2010)

Dr. Joby Thomas K
Chairman,
Board of Studies (Chemistry PG)
University of Calicut

TABLE 1
Courses offered for M.Sc. Chemistry Programme under CSS
Patten in Affiliated Colleges (2015 onwards)

Semester	Course Code	Course Title	Instruction/ Week	Credits
I	CH1CO1	Basic concepts in quantum chemistry and group Theory	3	3
	CH1CO2	Elementary inorganic chemistry	3	3
	CH1CO3	Structure and reactivity of organic compounds	3	3
	CH1CO4	Thermodynamics, kinetics and catalysis	3	3
	CH1PO1	Inorganic chemistry practical I	4	-
	CH1PO2	Organic chemistry Practical I	4	-
	CH1PO3	Physical chemistry practical I	4	-
		Total credits:	Core	12
II	CH2CO5	Applications of quantum mechanics and group theory	3	3
	CH2CO6	Coordination chemistry	3	3
	CH2CO7	Organic reaction mechanisms	3	3
	CH2CO8	Electrochemistry, solid state chemistry and Statistical Thermodynamics	3	3
	CH2PO4	Inorganic chemistry practical II	4	4
	CH2PO5	Organic chemistry practical II	4	4
	CH2PO6	Physical chemistry practical II	4	4
	CH2VO1	Viva voce		2
		Total credits:	Core Viva	24 2
III	CH3CO9	Molecular spectroscopy	3	3
	CH3C10	Organometallic & Bioinorganic chemistry	3	3
	CH3C11	Organic transformations and reagents	3	3
	CH3PO7	Inorganic chemistry practical III	4	
	CH3PO8	Organic chemistry practical III	4	
	CH3PO9	Physical chemistry practical III	4	
	CH3EO1	Synthetic organic chemistry(Elective)	3	3
	CH3EO2	Computational chemistry(Elective)	3	3
	CH3EO3	Green and Nanochemistry(Elective)	3	3
		Total Credits:	Core Elective	9 3

IV	CH4C12	Advanced Topics in Chemistry	4	4	
	CH4C13	Instrumental Methods of Analysis	4	4	
	CH4P10	Inorganic Chemistry Practical IV	3	4	
	CH4P11	Organic Chemistry Practical IV	3	4	
	CH4P12	Physical Chemistry Practical IV	3	4	
	CH4EO4	Petrochemicals and Cosmetics(Elective)	4	4	
	CH4EO5	Industrial Catalysis(Elective)	4	4	
	CH4EO6	Natural Products & Polymers(Elective)	4	4	
	CH4EO7	Material Science(Elective)	4	4	
	CH4PrO1	Research Project	3	4	
	CH4VO2	Viva Voce		2	
		Total Credits:			
				Core	20
			Elective	4	
			Project	4	
			Viva	2	
TOTAL CREDITS OF THE PROGRAMME					
			CORE	65	
			ELECTIVE	7	
			PROJECT	4	
			VIVA VOCE	4	
			TOTAL CREDITS	80	