

All Communications should be addressed to 'The Registrar' and not to any officer by name. The No. and date of previous correspondence on the subject, if any, should invariably be given otherwise no action will be taken

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Gram : UNIVERSITY



DEVI AHILYA VISHWAVIDYALAYA, INDORE

UNIVERSITY HOUSE
INDORE- 452-001

No. Academic/Affiliation/2021/2782

Date..... 22 DEC 2021

TO WHOM SOEVER IT MAY CONCERN

This is to certify that **Govt. Holkar (Model Autonomous) Science College, Bhanwar Kuwa, Indore, Madhya Pradesh** is affiliated to the **Devi Ahilya Vistwavidyalaya Indore** since 1964 and recognized by the University Grants Commission and the following Programmes Courses and subjects are taught in the said college:

List of Programmes/Subjects

1. Three-year B.Sc. Program with foundation subjects (General Hindi, General English, Environment, Entrepreneurship, Computer Concept, Yoga and Dhyana as a compulsory component) and Physics, Chemistry, Zoology, Botany. Mathematics, Biochemistry, Biotechnology, Bioinformatics, Industrial Fish & Fisheries, Microbiology, Seed technology, Horticulture, Forensic Science, Computer Science, Electronics, Pharmaceutical Chemistry, Geology, Statistics, Economics and Geography as optional subjects.
2. Two-year M.Sc. Program in the subjects Biochemistry, Biotechnology, Botany, Chemistry. Computer Science, Fisheries Science, Forensic Science, Geology, Geography. Mathematics, Microbiology, Pharmaceutical Chemistry, Physics, Seed Technology, Statistics, and Zoology.
3. Three years BCA Program.
4. PG Diploma (PGDCA)

Affiliation given to this college and its courses are valid as on date of issue of this letter.


Registrar

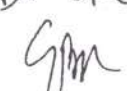
Department of Biochemistry
Govt. Holkar Science College, Indore (M.P.)
M.Sc. BIOCHEMISTRY (2020-2021)
Scheme of Examination
Course Duration- 2 years (4 Semesters)

Semester-I

Code	Theory/ Practical	Teaching hours/ week	Credit	Examination Scheme		
				External	Internal	Total
Core 1	Chemistry of Biomolecules	4	4	75	25	100
Core 2	Analytical Biochemistry	4	4	75	25	100
Core 3	Cell Biology	4	4	75	25	100
Core 4	Biostatistics	4	4	75	25	100
Practical 1	Based on Theory paper 1 & 2	6	3	75	-	75
Practical 2	Based on Theory paper 3 & 4	6	3	75	-	75
Seminar	Seminar 1	1	1	-	25	25
	Seminar 2/Field visit/ Ind. visit	1	1	-	25	25
		30	24			600

Board of Studies

S.No.	Name	Designation	Signature
1.	Dr. A.Bafna	Chairman	
2.	Dr. Rekha Gadre	VC Member	
3.	Dr. G.G. Potey	Subject Expert	
4.	Dr. Sangita Paneri	Subject Expert	
5.	Mr. Rohan Gupta	Representative from Industry	
6.	Prof. A. R. Batham	Member	
7.	Prof. Tasneem Rangwala	Member	
8.	Prof. Sheetal Uikey	Member	
9.	Prof. Deepak Choudhary	Member	
10.	Mrs. Rajshree Kabra	Alumni	

Dr. e. e. Potey

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M.Sc. BIOCHEMISTRY (2020-2021)

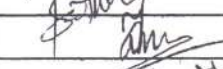
Scheme of Examination


Course Duration- 2 years (4 Semesters)

Semester- II

Code	Theory/ Practical	Teaching hours/ week	Credit	Examination Scheme		
				External	Internal	Total
Core 5	Physiology	4	4	75	25	100
Core 6	Microbial Biochemistry	4	4	75	25	100
Core 7	Nutritional Biochemistry	4	4	75	25	100
Core 8	Genetics	4	4	75	25	100
Practical 3	Based on Theory paper 5 & 6	6	3	75	-	75
Practical 4	Based on Theory paper 7 & 8	6	3	75	-	75
Seminar	Seminar 3	1	1	-	25	25
	Seminar 4/Field visit/ Ind. visit	1	1	-	25	25
		30	24			600

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7.	Prof. Tasneem Rangwala	Member	
8.	Prof. Sheetal Uikey	Member	
9.	Prof. Deepak Choudhary	Member	
10.	Mrs. Rajshree Kabra	Alumni	

Dr. G.G. Potey


M.Sc. BIOCHEMISTRY (2020-2021)

Scheme of Examination

Course Duration- 2 years (4 Semesters)

Semester- III

Code	Theory/ Practical	Teaching hours/ week	Credit	Examination Scheme		
				External	Internal	Total
Core 9	Enzymology	4	4	75	25	100
Core 10	Metabolism I	4	4	75	25	100
Elective 1	Plant Biochemistry	4	4	75	25	100
	or					
	Environmental Toxicology					
Elective 2	Biotechnology	4	4	75	25	100
	or					
	Advanced Biochemistry					
Open Elective I Interdisciplinary	Biochemical technique(for other departments)	4	4	75	25	100
Practical 5	Based on Theory paper 9 & 10	6	3	75	-	75
Practical 6	Based on Theory paper 1 & 2 (elective)	6	3	75	-	75
		32	26			650

Board of Studies

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8.	Prof. Sheetal Uikey	Member	
9.	Prof. Deepak Choudhary	Member	
10.	Mrs. Rajshree Kabra	Alumni	

Dr. G. E. P. Potey
GM 3

M.Sc. BIOCHEMISTRY (2020-2021)

Scheme of Examination

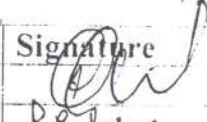
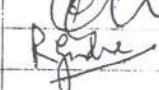
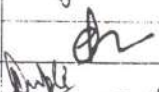

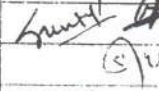
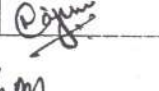
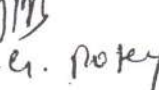


Course Duration- 2 years (4 Semesters)

Semester- IV

Code	Theory/ Practical	Teaching hours/ week	Credit	Examination Scheme		
				External	Internal	Total
Core 11	Molecular Biology	4	4	75	25	100
Core 12	Metabolism II	4	4	75	25	100
Applied Paper	Clinical Biochemistry	4	4	75	25	100
Elective 3	Immunology	4	4	75	25	100
	Or Environmental Biochemistry					
Elective 4	Scientific Writing	4	4	75	25	100
	Or Computer application in Biochemistry					
Practical 7	Based on Theory paper 11 & 12	6	3	75	-	75
Practical 8	Based on Theory paper 3& 4 (elective)	6	3	75	-	75
Internship		4	4	50	50	100
		36	30			750
	Total	128	104			2690

Note: Students securing 70% or above can opt for project instead of any one elective paper.

Board of Studies

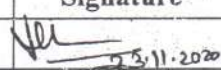

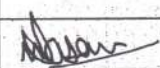

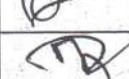
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1.	Dr. A. Bafna	Chairman	
2.	Dr. Rekha Gadre	VC Member	
3.	Dr. G.G. Potey	Subject Expert	
4.	Dr. Sangita Paneri	Subject Expert	
5.	Mr. Rohan Gupta	Representative from Industry	
6.	Prof. A. R. Batham	Member	
7.	Prof. Tasneem Rangwala	Member	
8.	Prof. Sheetal Uikey	Member	
9.	Prof. Deepak Choudhary	Member	
10.	Mrs. Rajshree Kabra	Alumni	

GM
Dr. G.G. Potey

GOVT. HOLKAR MODEL AUTONOMOUS SCIENCE COLLEGE, AB ROAD INDORE
DEPARTMENT OF BIOTECHNOLOGY
SUBJECT - BIOTECHNOLOGY
Syllabus of M.Sc. (Two Year Course)
M.Sc. I SEMESTER
Session : 2020-21

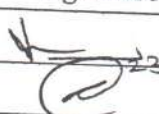


Code	Theory/Practical	Teaching Hours/ week	Credit	Marks Distribution					
				Max. Marks			Min. Pass Marks		
				Theory (External)	CCE (Internal)	Total	Theory (External)	CCE (Internal)	Total
Core 1	Paper I(Biochemistry)	4	4	75	25	100	30	10	40
Core 2	Paper II(Cell and Development Biology)	4	4	75	25	100	30	10	40
Core 3	Paper III (Microbiology)	4	4	75	25	100	30	10	40
Core 4	Paper IV (Biostatistics & Bioinformatics)	4	4	75	25	100	30	-	40
Practical -1	Practical based on Theory paper I & II)	6	3	75	-	75	30	-	30
Practical-2	Practical based on Theory paper III & IV	6	3	75	-	75	30	-	30
Seminar	Seminar 1	1	1	-	25	25	10	-	10
	Seminar 2/Field trip/Ind.Visit.	1	1	-	25	25	10	-	10
		30	24			600			-

Experts Members (Name & Signature)

S.No.	Name	Designation	Signature
1	Dr. Kiran Billore	Chairman	 3.11.2020
2	Dr. A. Nighojkar	VC Member	
3	Dr. Bhavesh Patel	Subject Expert	
4	Dr. R K Garg	Subject Expert	
5	Mr. Nitesh Jasani	Representative from Industry	
6	Dr. Rekha Sharma	Member	
7	Mrs. Farida Johar	Alumni	



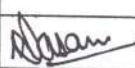


GOVT. HOLKAR MODEL AUTONOMOUS SCIENCE COLLEGE, AB ROAD INDORE
DEPARTMENT OF BIOTECHNOLOGY
SUBJECT - BIOTECHNOLOGY
M.Sc. II SEMESTER
Session : 2020-21

Code	Theory/Practical	Teaching Hours/week	Credit	Marks Distribution					
				Max. Marks			Min. Pass Marks		
				Theory (External)	CCE (Internal)	Total	Theory (External)	CCE (Internal)	Total
Core 5	Paper V (Molecular Biology)	4	4	75	25	100	30	10	40
Core 6	Paper VI (Bacterial Genetics and Genetic Engineering)	4	4	75	25	100	30	10	40
Core 7	Paper VII (Immunology)	4	4	75	25	100	30	10	40
Core 8	Paper VIII (Analytical Techniques)	4	4	75	25	100	30	-	30
Practical-3	Practical based on Theory paper V & VI	6	3	75	-	75	30	-	30
Practical-4	Practical based on Theory paper VII & VIII	6	3	75	-	75	30	-	30
Seminar	Seminar 3	1	1	-	25	25	10	-	10
	Seminar 4/Field Trip/Ind. Visit etc	1	1	-	25	-25	10	-	10
		30	24			600			

Experts Members (Name & Signature)			
S.No.	Name	Designation	Signature
1	Dr. Kiran Billore	Chairman	
2	Dr. A. Nighojkar	VC Member	
3	Dr. Bhavesh Patel	Subject Expert	
4	Dr. R K Garg	Subject Expert	
5	Mr. Nitesh Jasani	Representative from Industry	
6	Dr. Rekha Sharma	Member	
7	Mrs. Farida Johar	Alumni	

GOVT. HOLKAR [Model, Autonomous] SCIENCE COLLEGE, A.B.Road, INDORE
DEPARTMENT OF BIOTECHNOLOGY
Session : 2020-21
M.Sc. III - SEMESTER

Paper	Theory/Practical	Teaching Hours/ week	Credit	Marks Distribution					
				Max. Marks			Min. Passing Marks		
				Theory (External)	CCE (Internal)	Total	Theory (External)	CCE (Internal)	Total
Core-9	Paper - IX Enzyme Technology	4	4	75	25	100	30	10	40
Core-10	Paper- X Plant Biotechnology	4	4	75	25	100	30	10	40
Elective-1	Paper XI A) Environmental Biotechnology B) Stem Cell Biology	4	4	75	25	100	30	10	40
	Paper XII A) Food Biotechnology B)Pharmacogenomics	4	4	75	25	100	30	10	40
Open Elective Interdisciplinary	Paper XIII Option from given list	4	4	75	25	100	30	10	40
Practical-5	Practical based on core Theory paper IX & X	6	3	75	-	75	30	-	30
Practical-6	Practical based on elective Theory paper XI & XII	6	3	75	-	75	30	-	30
		32	26			650			

Experts Members (Name & Signature)			
S.No.	Name	Designation	Signature
1	Dr. Kiran Billore	Chairman	
2	Dr. A. Nighojkar	VC Member	
3	Dr. Bhavesh Patel	Subject Expert	
4	Dr. R K Garg	Subject Expert	
5	Mr. Nitesh Jasani	Representative from Industry	
6	Dr. Rekha Sharma	Member	
7	Mrs. Farida Johar	Alumni	

GOVT. HOLKAR [Model, Autonomous] SCIENCE COLLEGE, A.B.Road, INDORE

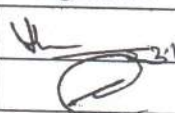
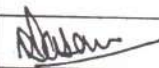


DEPARTMENT OF BIOTECHNOLOGY

Session : 2020-21

M.Sc. IV- SEMESTER

Code	Theory/Practical	Teaching Hours/week	Credit	Marks Distribution					
				Max. Marks			Min. Pass Marks		
				Theory (External)	CCE (Internal)	Total	Theory (External)	CCE (Internal)	Total
Core -11	Paper XIV Bioprocess Technology	4	4	75	25	100	30	10	40
Core -12	Paper -XV Animal Biotechnology	4	4	75	25	100	30	10	40
Elective -3	Paper XVI A) Cancer Genetics B) Bionanotechnology	4	4	75	25	100	30	10	40
Elective 4	Paper XVII A) Genomics, Proteomics, IPR & Biosafety B) Engineering Principles/Project	4	4	75	25	100	30	10	40
Internship			4	50	50	100	-	-	40
Practical-7	Practical based on Theory Paper -XIV & XV	6	3	75	-	75	30	-	30
Practical-8	Practical based on elective Theory Paper XVI & XVII	6	3	75	-	75	30	-	30
		32	26			650			

Experts Members (Name & Signature)

S.No.	Name	Designation	Signature
1	Dr. Kiran Billore	Chairman	
2	Dr. A. Nighojkar	VC Member	 2/11/2020
3	Dr. Bhavesh Patel	Subject Expert	
4	Dr. R K Garg	Subject Expert	
5	Mr. Nitesh Jasani	Representative from Industry	
6	Dr. Rekha Sharma	Member	
7	Mrs. Farida Johar	Alumni	

Semester Three

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 9	Paper 1 Plant Physiology	4	4	75	25	100
Core 10	Paper 2 Plant Biochemistry & Metabolism	4	4	75	25	100
Elective 1	Paper 3-A Cytology and Genetics	4	4	75	25	100
	OR					
	Paper 3-B Economic Botany	4	4			
Elective 2	Paper 4- A Molecular Biology	4	4	75	25	100
	OR					
	Paper 4- B Advance-Taxonomy, Embryology and Anatomy of Angiosperms	4	4			
Open-Elective Inter-disciplinary (Other than Botany Students)	Paper 5 (out of given group) Environmental Biology	4	4	75	25	100
Practical -1	Practical I – based on Course PG Paper 1 & 2	6	3	75	-	75
Practical -2	Practical II – based on Course PG Paper 3 & 4	6	3	75	-	75
		32	26			650

Semester Four

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 11	Paper- 1 Plant Cell, Tissue & Organ Culture	4	4	75	25	100
Core 12	Paper -2 Biotechnology & Genetic Engineering	4	4	75	25	100
Elective 3	Paper-3-A Plant Pathology	4	4	75	25	100
	OR					
	Paper -3-B Plants & Society	4	4	75	25	100
Elective 4	Paper -4-A Industrial Microbiology	4	4	75	25	100
	OR					
	Paper -4-B Pollution Ecology	4	4	75	25	100
	OR					
	* Project/ Applied Botany	4	4	75	25	100
Practical -7/-1	Practical I – based on Course PG Paper 1 & 2	6	3	75	-	75
Practical -8/-2	Practical II – based on Course PG Paper 3 & 4	6	3	75	-	75
Internship/-3		4	4	50	50	100
		34	26			650
	Total	100	100			2500

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 K. S. Rana
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**Department of Chemistry, Govt. Holkar Science College,
Indore [M.P.]**

Scheme of CBCS Programme for P.G. Students for the year 2020-21

SEMESTER - I

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Paper-I	Inorganic Chemistry- I	4 hrs	4	75	25	100
Paper- II	Organic Chemistry-I	4 hrs	4	75	25	100
Paper- III	Physical Chemistry - I	4 hrs	4	75	25	100
Paper- IV	Group Theory and Spectroscopy-I	4 hrs	4	75	25	100
Practical -I	Inorganic, Organic and Physical Chemistry	8 hrs each	4	--	--	150
Seminar	Seminar- I	1 hrs	1	--	25	25
	Seminar/ Industry Visit	1 hrs	1	--	25	25
Total		26 hrs	22			600

SEMESTER - II

Code	Theory/ Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Paper- I	Inorganic Chemistry- II	4 hrs	4	75	25	100
Paper- II	Organic Chemistry-II	4 hrs	4	75	25	100
Paper- III	Physical Chemistry -II	4 hrs	4	75	25	100
Paper- IV	Spectroscopy- II and Diffraction Method	4 hrs	4	75	25	100
Practical -I	Inorganic, Organic and Physical Chemistry	8 hrs each	4	----	--	150
Seminar	Seminar- I	1 hrs	1	--	25	25
	Seminar/ Industry Visit	1 hrs	1	--	25	25
Total		26 hrs	22			600

Members of BOS

- ① Dr. Rooplekha vyas → G K
- ② Dr. Ashok Sharma → (Signature)
- ③ Dr. Kalpana Singh → Vh
- ④ Dr. M K Dwivedi → M

Professor and Head
 Department of Chemistry
 Govt. Holkar Science College, Indore
 M.P. 462001
 India

**Department of Chemistry, Govt. Holkar Science College,
Indore [M.P.]**

Scheme of CBCS Programme for P.G. Students for the year 2020-21

SEMESTER - III

Code	Theory/ Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Paper-I	Application of Spectroscopy-I	4	4	75	25	100
Paper-II	Photo-Chemistry	4	4	75	25	100
Paper-III	Environmental Chemistry	4	4	75	25	100
Paper-IV	(Optional Papers) Polymer OR Natural Products OR Organo-transition Metal Chemistry OR Heterocyclic Chemistry	4	4	75	25	100
Open Elective	Health Chemistry	4	4	75	25	100
Practical-I	Inorganic, Organic and Physical Chemistry	8	4	150	--	150
Total		28	20			650


Professor And Head
 Department of Chemistry
 Govt. Holkar Sc. College, INDOR

**Department of Chemistry, Govt. Holkar Science College,
Indore [M.P.]**

Scheme of CBCS Programme for P.G. Students for the year 2020-21

SEMESTER - IV

Code	Theory/ Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Paper-I	Application of Spectroscopy-II	4	4	75	25	100
Paper-II	Solid State	4	4	75	25	100
Paper-III	Bio-chemistry	4	4	75	25	100
Paper-IV	(Optional Papers) Applied Analytical Chemistry	4	4	75	25	100
	OR Organic Synthesis					
	OR Medicinal Chemistry					
	OR Electrochemistry					
	OR Cheminformatics					
Practical	Inorganic, Organic and Physical Chemistry	8	4	150	--	150
Internship	60 Hours	4	4	50	50	100
Total		28	24			650
Grand Total			100			

M. *Kb* *ak* *3m*

Jew
Professor And Head
Department of Chemistry
Govt. Sc. College, INDORE

M.Sc. Computer Science
Academic Year 2020-21

-Semester - I							
Code	Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
					External	Internal	Total
Core 1	MSC-CS-101	Computer & Communication Fundamentals	4	4	75	25	100
Core 2	MSC-CS-102	Discrete Structure	4	4	75	25	100
Core 3	MSC-CS-103	Operating System	4	4	75	25	100
Core 4	MSC-CS-104	Programming & Problem solving Through "C-Language"	4	4	75	25	100
Practical -1	Practical-1	Practical based on Theory paper 1 & 2)	6	3	75	-	75
Practical-2	Practical-2	Practical based on Theory paper 3 & 4	6	3	75	-	75
Seminar	Seminar	Seminar 1	1	1	-	25	25
		Seminar 2/Field trip/Industry Visit.	1	1	-	25	25
			30	24			600

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M.Sc, (CS). Department of Computer Science, GHSC, Indore

विभागाध्यक्ष
विज्ञान विभाग
गणित विभाग, इन्दौर
2

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DEPARTMENT OF COMPUTER SCIENCE

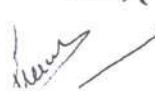

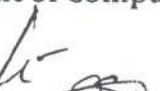

M.Sc. Computer Science

Academic Year 2020-21

-Semester- II							
Code	Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
					External	Internal	Total
Core 5	M.SC-CS-201	Computer Networks	4	4	75	25	100
Core 6	M.SC-CS-202	Data Structures using C++	4	4	75	25	100
Core 7	M.SC-CS-203	Computer oriented numerical and statistical method	4	4	75	25	100
Core 8	M.SC-CS-204	Database Management Systems	4	4	75	25	100
Practical-3	Practical-1	Practical based on Theory paper 5 & 6	6	3	75	-	75
Practical-4	Practical-2	Practical based on Theory paper 7 & 8	6	3	75	-	75
Seminar	Seminar	Seminar 3	1	1	-	25	25
		Seminar 4/Field Trip/Ind. Visit etc	1	1	-	25	25
			30	24			600

M.Sc, (CS). Department of Computer Science, GHSC, Indore


 विभागाध्यक्ष
 कंप्यूटर विज्ञान विभाग
 गीतिका संशोधन संस्थान, इन्दौर
 12/12/2020




DEPARTMENT OF COMPUTER SCIENCE

M.Sc. Computer Science

Academic Year 2020-21

Semester-III							
Code	Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
					External	Internal	Total
Core 9	M.SC-CS-301	Object Oriented Programming using JAVA	4	4	75	25	100
Core 10	M.SC-CS-302	Database Applications and Tools	4	4	75	25	100
Elective-1	M.SC-CS-303 (Elective 1)	Theory of Computation	4	4	75	25	100
		OR Computer Architecture	4	4			
Elective-2	M.SC-CS-304 (Elective 2)	Software Engineering	4	4	75	25	100
		OR Linux/ UNIX Administration	4	4			
Open Elective 1 Inter-disciplinary		Paper 13 (out of given group)	4	4	75	25	100
Practical -5	Practical -1	Practical based on paper 9 & 10	6	3	75	-	75
Practical -6	Practical -2	Practical based on paper 1 & 2(elective)	6	3	75	-	75
			32	26			650





 विभागाध्यक्ष
 विज्ञान विभाग
 मध्य प्रदेश विश्वविद्यालय, इन्दौर
 2020

M.Sc, (CS). Department of Computer Science, GHSC, Indore










DEPARTMENT OF COMPUTER SCIENCE

M.Sc. Computer Science

Academic Year 2020-21

Semester-IV							
Code	Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
					External	Internal	Total
Core 11	M.SC-CS-401	System Analysis And Design	4	4	75	25	100
Core 12	M.SC-CS-402	Design and Analysis of Algorithms	4	4	75	25	100
Elective 3	M.SC-CS-403 (Elective 3)	Internets and Web Technology	4	4	75	25	100
		OR Accounting and Financial Management	4	4	75	25	100
Elective 4	M.SC-CS-404 (Elective 4)	Computer Graphics and Multimedia	4	4	75	25	100
		OR Compiler Design	4	4	75	25	100
		OR Project	4	4	75	25	100
		OR Network Security and Cryptography	4	4	75	25	100
Elective 5	M.SC-CS-405 (Applied Computing Sc.)	OR Python for Data Science	4	4	75	25	100
		OR Practical based on paper 11 & 12	6	3	75	-	75
Practical -7	Practical -1	Practical based on paper 3 & 4(elective)	6	3	75	-	75
Practical -8	Practical -2	Practical based on paper 3 & 4(elective)	6	3	75	-	75
Internship	Internship		4	4	50	50	100
			36	30			750
		Total	100	100			2600

M.Sc, (CS). Department of Computer Science, GHSC, Indore

विभागाध्यक्ष

कम्प्यूटर विज्ञान विभाग 20
भा.स. इन्दौर विज्ञान महाविद्यालय, इन्दौर
21/2/2021

GOVT. HOLKAR (MODEL, AUTONOMOUS) SCIENCE COLLEGE, A.B.
ROAD, INDORE

SYLLABUS OF M.Sc. FISHERIES
SCHEME OF EXAMINATION SESSION 2020- 2021
CHOICE BASED CREDIT SYSTEM (CBCS)

M. Sc. I semester

Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -1	Paper -1: Fish Anatomy & Physiology	4	4	75	25	100
Core -2	Paper -2 : Fish Breeding & Hatchery Technology	4	4	75	25	100
Core -3	Paper -3: AQUACULTURE	4	4	75	25	100
Core -4	Paper -4 : Crustacean, Molluscan and Echinoderm Fisheries	4	4	75	25	100
Practical - 1	Practical (Based on Theory Paper 1 & 2)	6	3	75	-	75
Practical - 2	Practical (Based on Theory Paper 3 & 4)	6	3	75	-	75
Seminar	Seminar -1	1	1	-	25	25
	Seminar 2/Field Trip/Ind. Visit.	1	1	-	25	25
		30	24	-	-	600

M. Sc. II Semester


Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -5	Paper -5 : BIOSTATISTICS AND INSTRUMENTATION	4	4	75	25	100
Core -6	Paper -6 : AQUATIC BIOLOGY	4	4	75	25	100
Core -7	Paper -7 : FISHERIES RESOURCE MANAGEMENT	4	4	75	25	100
Core -8	Paper -8 : HARVEST AND POST HARVEST TECHNOLOGY	4	4	75	25	100
Practical - 3	Practical (Based on Theory Paper 5 & 6)	6	3	75	-	75
Practical - 4	Practical (Based on Theory Paper 7 & 8)	6	3	75	-	75
Seminar	Seminar -3	1	1	-	25	25
	Seminar - 4/Field trip/Ind. Visit.	1	1	-	25	25
		30	24	-	-	600


नोट :- परीक्षा विभाग, होलकर विज्ञान महाविद्यालय, इन्दौर द्वारा यदि Scheme में किसी प्रकार संशोधन सर्वधन किया जाता है तो वह मान्य होगा।


(Dr. Lata Bhattacharya)
Subject Expert


(Dr. Rachira Choudhary)
Subject Expert


(Dr. Kirti Tiwari)
VC Member


(Dr. Pratima Khatri)
Industrial Member


(Dr. Rekha Sharma)
Chairman & Head

(Mr. Rahul Kharekar)
Student representative

GOVT. HOLKAR (MODEL, AUTONOMOUS) SCIENCE COLLEGE, A.B. ROAD, INDORE
SYLLABUS OF M.SC. FISHERIES
SCHEME OF EXAMINATION SESSION 2020- 2021
CHOICE BASED CREDIT SYSTEM (CBCS)

M. Sc. III Semester


Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -9	Papcr -9 : Fisheries Economics and Marketing	4	4	75	25	100
Core -10	Paper -10 : Basics of Computer Application	4	4	75	25	100
Elective -1	Paper -11: (Elective-1) Ecotoxicology & Pollution OR	4	4	75	25	100
	Paper -11: (Elective-1) Ornamental Fisheries	4	4	75	25	100
Elective -2	Paper -12: (Elective -2) Environmental Pollution Fish & Fishery OR	4	4	75	25	100
	Paper -12 :(Elective -2) Ecology of Culture systems	4	4	75	25	100
Open Elective 1 Inter- disciplinary	Paper -13: (Out of given group) -	4	4	75	25	100
Practical - 5	Practical (Based on Theory Paper 9 & 10)	6	3	75	-	75
Practical - 6	Practical (Based on Theory Paper 11 & 12)	6	3	75	-	75
		32	26	-	-	650

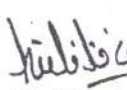
M. Sc. IV Semester


Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -11	Paper -14: Fish Genetics And Biotechnology	4	4	75	25	100
Core -12	Paper -15 Fish Nutrition and Feed Technology	4	4	75	25	100
Elective - 3	Paper -16: (Elective -3) Fish Health Management OR	4	4	75	25	100
	Paper -16: (Elective -3) Fishery technology and Fish pathology	4	4	75	25	100
Elective - 4	Paper -17: (Elective -4) Fisheries Economics and Extension OR	4	4	75	25	100
	Paper -17: (Elective -4 Nutrient Management in Aquaculture OR	4	4	75	25	100
Practical- 7	Practical (Based on Theory Paper 14 & 15)	6	3	75	-	75
Practical- 8	Practical (Based on Theory Paper 15 & 16)	6	3	75	-	75
Internship		4	4	50	50	100
		32	26	-	-	650
	Total	100	100	-	-	2500

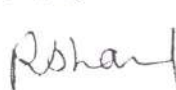
नोट :- परीक्षा विभाग, होलकर विज्ञान महाविद्यालय, इन्दौर द्वारा यदि Scheme में किसी प्रकार संशोधन सर्वधन किया जाता है तो वह मान्य होगा।


(Dr. Lata Bhattacharya)
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(Mr. Rahul Kharekar)
Student representative

Government Holkar (Model Autonomous) Science College, Indore
Department of Geology,
M.Sc. Geology Syllabus [Session 2020 - 21]
Choice Based Credit System (CBCS Pattern) (Total 100 Credits)

Semester - I

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme			
				External	Internal	Total	Min Passing marks (35%)
G-11	Paper –1 Geodynamics	4	4	75	25	100	35
G12	Paper –2 Structural Geology	4	4	75	25	100	35
G13	Paper –3 Indian Stratigraphy	4	4	75	25	100	35
G14	Paper –4 Mineralogy and Geochemistry	4	4	75	25	100	35
Practical -1 PRG-11	Structural Geology	6	3	75	-	75	26
Practical-2 PRG-12	Mineralogy and Geochemistry	6	3	75	-	75	26
Seminar	Seminar – 1	1	1	-	25	25	09
	Seminar - 2/ Local Field Study	1	1	-	25	25	09
		30	24			600	240

1. Minimum passing marks will be 35 % in each Theory Paper, Practical, CCE, Internship/Project).
2. Overall passing marks i.e. Semester Total is 35 %.

Government Holkar (Model Autonomous) Science College, Indore
 Department of Geology,
 M.Sc. Geology Syllabus [Session 2020 - 21]
 Choice Based Credit System (CBCS Pattern) (Total 100 Credits)

Semester - II

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme			
				External	Internal	Total	Min Passing marks (35 %)
G-21	Paper -5 Geomorphology	4	4	75	25	100	35
G-22	Paper -6 Igneous and metamorphic Petrology	4	4	75	25	100	35
G-23	Paper -7 Sedimentology	4	4	75	25	100	35
G-24	Paper -8 Palaeobiology	4	4	75	25	100	35
Practical-3 PRG-21	Petrology	6	3	75	-	75	26
Practical-4 PRG-22	Stratigraphy and Paleobiology	6	3	75	-	75	26
Seminar	Seminar - 3	1	1	-	25	25	09
	Field Trip / Industrial Visit	1	1	-	25	25	09
		30	24			600	240

1. Minimum passing marks will be 35 % in each Theory Paper, Practical, CCE, Internship/Project).
2. Overall passing marks i.e. Semester Total is 35 %.

Government Holkar (Model Autonomous) Science College, Indore
Department of Geology,
M.Sc. Geology Syllabus [Session 2020 - 21]
Choice Based Credit System (CBCS Pattern) (Total 100 Credits)

Semester - III

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme			
				External	Internal	Total	Min. Passing marks (35%)
G-31	Paper - 9 Economic Geology	4	4	75	25	100	35
G-32	Paper - 10 Mineral Exploration	4	4	75	25	100	35
G-33-A	Paper - 11 Remote Sensing (Elective 1)	4	4	75	25	100	35
Elective 1	OR						
G-33-B	Paper - 11 Computer Applications in Geology (Elective 1)	4	4	75	25	100	35
G-34-A	Paper - 12 Hydrogeology (Elective 2)	4	4	75	25	100	35
Elective 2	OR						
G34-B	Paper - 12 Engineering Geology and Geotechniques (Elective 2)	4	4	75	25	100	35
OE-RS	Open Elective Inter-disciplinary Paper - 13 Elect any one from Interdisciplinary papers (out of given group)	4	4	75	25	100	35
Practical-5 PR G-31	Economic Geology & Mineral Exploration	6	3	75	-	75	26
Practical-6 PR G-32	Remote sensing/Hydrogeology/ Computer Application in Geology /Engineering Geology and Geotechniques	6	3	75	-	75	26
		32	26			650	260

1. Minimum passing marks will be 35 % in each Theory Paper, Practical, CCE, Internship/Project).
2. Overall passing marks i.e. Semester Total is 35 %.

Government Holkar (Model Autonomous) Science College, Indore
Department of Geology,
M.Sc. Geology Syllabus [Session 2020 - 21]

Choice Based Credit System (CBCS Pattern) (Total 100 Credits)

Semester - IV

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme			
				External	Internal	Total	Min. Passing marks (35%)
G-41	Paper – 14 Ore Geology	4	4	75	25	100	35
G-42	Paper – 15 Applied Geology	4	4	75	25	100	35
G-43A	Paper -16 Environmental Geology (Elective-3)	4	4	75	25	100	35
Elective-1	OR						
G-43B	Paper – 16 Mineral Processing and Technology (Elective-3)	4	4	75	25	100	35
G-44A	Paper -17 Fuel Geology (Elective-4)	4	4	75	25	100	35
Elective-2	OR						
G-44B	Paper -17 Project (In House) (Elective-4)	4	4	75	25	100	35
Practical -7 PRG-41	Field Work and Practical of Applied and Ore Geology	6	3	75	-	75	26
Practical- 8 PRG-42	Environmental Geology/Mineral Technology / Fuel Geology	6	3	75	-	75	26
Internship	In concerned Organizations/Field/Mines etc.	4	4	50	50	100	35
		32	26			650	260
	Total	100	100			2500	1000

1. Minimum passing marks will be 35 % in each Theory Paper, Practical, CCE, Internship/Project).
2. Overall passing marks i.e. Semester Total is 35 %.

Note :

1. Where Field visit [Academic tour] is involved, which may be of One week at least, and if it is in lieu of one seminar, then 25 marks will be kept separately. Otherwise, both the practicals will be of equal marks and 25 marks will be allotted separately for Field visit. Department will arrange tour in 2nd Semester and 4th Semester.

2. सत्र 2020-21 में स्नातकोत्तर स्तर पर C.B.C.S. (Choice Based Credit System) के अन्तर्गत सेमेस्टर, प्रथम, द्वितीय, तृतीय, चतुर्थ के लिए पाठ्यक्रम अनुशंसित किया गया तथा तृतीय सेमेस्टर में एक अतिरिक्त प्रश्नपत्र C.B.C.S. के अन्तर्गत गणित विषय में Mathematical Modeling की अनुशंसा की गई। यह भी निर्णय लिया गया कि पूर्व सत्र की तरह ही बी.एस-सी. तृतीयवर्ष एवं एम.एस-सी. चतुर्थ सेमेस्टर में इंटर्नशिप/प्रोजेक्ट लागू रहेगा। इस प्रकार 21 प्रश्नपत्रों का पाठ्यक्रम पारित किया गया जिसका विवरण एवं परीक्षा योजना निम्नानुसार है -

M. Sc . (Mathematics) SEMESTER-I

Code	Theory /Practical	Teaching hours/ week	Credit	Examination scheme		
				External	Internal	Total
Core 1 /Paper 1	Advanced Abstract Algebra-I	6	4	75	25	100
Core 2	Real Analysis	6	4	75	25	100
Core 3	Topology-I	6	4	75	25	100
Core 4	Complex Analysis -I	6	4	75	25	100
Core 5	Advanced Discrete Mathematics-I	6	4	75	25	100
Internal - I	Comprehensive viva voce	3	2	50	-	50
External - I	Comprehensive viva voce	3	2	50	-	50
Total		36	24			600

M. Sc . (Mathematics) SEMESTER-II

Code	Theory /Practical	Teaching hours/ week	Credit	Examination scheme		
				External	Internal	Total
Core 6 / Paper 6	Advanced Abstract Algebra-II	6	4	75	25	100
Core 7	Lebesgue measure and Integration	6	4	75	25	100
Core 8	Topology-II	6	4	75	25	100
Core 9	Complex Analysis -II	6	4	75	25	100
Core 10	Advanced Discrete Mathematics-II	6	4	75	25	100
Internal - II	Comprehensive viva voce	3	2	50	-	50
External - II	Comprehensive viva voce	3	2	50	-	50
Total		36	24			600

M. Sc . (Mathematics) SEMESTER-III

Code	Theory /Practical	Teaching hours/ week	Examination scheme			
			Credit	Internal	External	Total
Core 11 / Paper 11	Functional Analysis-I	6	4	75	25	100
Core 12 / Paper 12	Advanced Special Functions-I	6	4	75	25	100
Elective 1 : Paper13	Advanced Fuzzy Mathematics-I	6	4	75	25	100
	Advanced Graph Theory-I					
Elective 2 : Paper 14	Operations Research-I	6	4	75	25	100
	Or					
	Theory of Linear Operators-I					
Elective 3 : Paper 15	Analytic Number Theory-I	6	4	75	25	100
	Or					
	Integral Transform-I					
Open Elective : Paper 16	Mathematical Modeling	6	4	75	25	100
External - III	Comprehensive viva voce	3	2	50	-	50
Comprehensive VIVA-Voce	Comprehensive viva voce	3	2	50	-	50
Total		42	28			700

M. Sc . (Mathematics) SEMESTER-IV

Code	Theory /Practical	Teaching hours/ week	Examination scheme			
			Credit	Internal	External	Total
Core 13/Paper 17	Functional Analysis-II	6	4	75	25	100
Core 14/Paper 18	Advanced Special Functions-II	6	4	75	25	100
Elective 4 : Paper 19	Advanced Fuzzy Mathematics-II	6	4	75	25	100
	Advanced Graph Theory-II					
Elective 5 : Paper20	Operations Research-II	6	4	75	25	100
	Or					
	Theory of Linear Operators-II					
Elective 6 : Paper21	Analytic Number Theory-II	6	4	75	25	100
	Or					
	Integral Transform-II					
Internship	Job Oriented Project	6	4	50	50	100
Total		36	24			600
Grand Total		208	100			2500
Minimum Passing marks will be 35% in each Theory, Practical, External, Internship, Project.						

(Signature)

Govt. Holkar Science College, Indore (M.P.)

Affiliated to

DEVI AHILYA VISHWAVIDYALAYA, INDORE

DEPARTMENT OF MICROBIOLOGY

**M.Sc. (Microbiology): Four Semester Course
(Duration: Two years)**

[Semester One]

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 1	Paper 1 Bacteriology	4	4	75	25	100
Core 2	Paper 2 Virology, Mycology and Phycology	4	4	75	25	100
Core 3	Paper 3 Immunology	4	4	75	25	100
Core 4	Paper 4 Microbial Biochemistry	4	4	75	25	100
Practical- 1	Practical based on Theory paper 1& 2	6	3	75	-	75
Practical- 2	Practical based on Theory paper 3& 4	6	3	75	-	75
Seminar	Seminar 1	1	1	-	25	25
	Seminar 2/ Field Trip/Industrial Visit etc.	1	1	-	25	25
		24	24			600

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26/11/2020

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[Signature]
Lachan Lalani
26/11/2020

[Signature]
Sugandha
26/11/2020

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27-11-20

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Professor & Head
Dept. of Microbiology
Govt. Holkar College, Indore (M.P.)

**M.Sc. (Microbiology): Four Semester Course
(Duration: Two years)
[Semester Two]**

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 5	Paper 5 Microbial Genetics	4	4	75	25	100
Core 6	Paper 6 Microbial Physiology	4	4	75	25	100
Core 7	Paper 7 Instrumentation	4	4	75	25	100
Core 8	Paper 8 Fermentation Technology	4	4	75	25	100
Practical- 3	Practical based on Theory paper 5& 6	6	3	75	-	75
Practical- 4	Practical based on Theory paper 7& 8	6	3	75	-	75
Seminar	Seminar 3	1	1	-	25	25
	Seminar 4 / Field Trip/Industrial Visit etc.	1	1	-	25	25
		24	24			600

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[Signature]
Professor & Head
Dept. of Microbiology
Govt. Hoikar College, Indore (M.P.)

M.Sc. (Microbiology): Four Semester Course
(Duration: Two years)

[Semester Three]

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 9	Paper 9 Molecular Biology and Genetic Engineering	4	4	75	25	100
Core 10	Paper 10 Medical Microbiology	4	4	75	25	100
Elective 1	Paper 11 Biostatistics and Computer applications	4	4	75	25	100
	OR					
	Paper 11 Microbial Ecology	4	4			
Elective 2	Paper 12 Bioinformatics, Proteomics and Genomics	4	4	75	25	100
	OR					
	Paper 12 Agriculture Microbiology	4	4			
Open Elective 1 Interdisciplinary	Paper 13 (out of given group)	4	4	75	25	100
Practical- 5	Practical based on Paper 9 & 10	6	3	75	-	75
Practical- 6	Practical based on Paper 11 & 12	6	3	75	-	75
		26	26			650

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Soulhan Lalans
26/11/2020

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Sugandha
26-11-2020

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16
Professor & Head
Dept of Microbiology

M.Sc. (Microbiology): Four Semester Course
(Duration: Two years)
[Semester Four]

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 11	Paper 13 Paper Food and Dairy Microbiology	4	4	75	25	100
Core 12	Paper 14 Environmental Microbiology	4	4	75	25	100
Applied Paper	Paper 15 Pharmaceutical Microbiology	4	4	75	25	100
	OR					
Elective 3	Paper 15 Biosafety and IPR Issues	4	4	75	25	100
Elective 4	Paper 16 Bio-Nanotechnology	4	4	75	25	100
	OR					
	Paper 16 Cell Biology	4	4	75	25	100
Practical- 7	Practical based on Paper 13 & 14	6	3	75	-	75
Practical- 8	Practical based on Paper 15 & 16	6	3	75	-	75
Internship		4	4	50	50	100
		28	28			650
	Total	100	100			2500

Note :-

- Where field visit is involved, it will be in Lieu of one seminar and will be given 25 marks.

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Professor & Head
Dept. of Microbiology
Govt. Holkar College, Indore (M.P.)

Govt. Holkar Science College Indore (M.P.)
M.Sc. Pharmaceutical Chemistry Syllabus
Choice Based Credit System (CBCS)
CORE SUBJECT : PHARMACEUTICAL CHEMISTRY
Year 2020 onward

Semester One

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 1	Paper 1 [PRINCIPLES OF INORGANIC PHARMACEUTICAL CHEMISTRY- I]	4	4	75	25	100
Core 2	Paper 2 [PRINCIPLES OF ORGANIC PHARMACEUTICAL CHEMISTRY- I]	4	4	75	25	100
Core 3	Paper 3 [PRINCIPLES OF PHYSICAL PHARMACY -I]	4	4	75	25	100
Core 4	Paper 4 [PHARMACEUTICAL ANALYSIS-I]	4	4	75	25	100
Practical -1	Practical [LAB COURSE -I]	6	3	75	-	75
Practical-2	Practical [LAB COURSE -II]	6	3	75	-	75
Seminar	Seminar 1	1	1	-	25	25
	Seminar 2/Field trip/Ind. Visit.	1	1	-	25	25
		30	24			600

Semester Two

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 5	Paper 5 [PRINCIPLES OF INORGANIC PHARMACEUTICAL CHEMISTRY -II]	4	4	75	25	100
Core 6	Paper 6 [PRINCIPLES OF ORGANIC PHARMACEUTICAL CHEMISTRY- II]	4	4	75	25	100
Core 7	Paper 7 [PRINCIPLES OF PHYSICAL PHARMACY-II]	4	4	75	25	100
Core 8	Paper 8 [PHARMACEUTICAL ANALYSIS- II]	4	4	75	25	100
Practical-3	Practical [LAB COURSE -I]	6	3	75	-	75
Practical-4	Practical [LAB COURSE -II]	6	3	75	-	75
Seminar	Seminar 3	1	1	-	25	25
	Seminar 4/Field Trip/Ind. Visit etc	1	1	-	25	25
		30	24			600

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Semester Three

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 9	Paper 9 [MEDICINAL CHEMISTRY]	4	4	75	25	100
Core 10	Paper 10 [CHEMISTRY OF NATURAL PRODUCTS]	4	4	75	25	100
Elective 1	Paper 11 [TOXICOLOGY]	4	4	75	25	100
	OR Paper 11 [PHARMACEUTICAL BIOTECHNOLOGY]	4	4			
Elective 2	Paper 12 [PHARMACOGNOSY]	4	4	75	25	100
	OR Paper 12 [APPLIED PHARMACEUTICS - I]	4	4	75	25	
Open Elective Inter-disciplinary	Paper 13 [OUT OF ANY GROUP EXCEPT HEALTH CHEMISTRY]	4	4	75	25	100
Practical -5	Practical [LAB COURSE -I]	6	3	75	-	75
Practical -6	Practical [LAB COURSE -II]	6	3	75	-	75
		32	26			650

Semester Four

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 11	Paper 13[ADVANCED MEDICINAL CHEMISTRY]	4	4	75	25	100
Core 12	Paper 14 [MODERN ANALYTICAL TECHNIQUES]	4	4	75	25	100
Elective 3	Paper 15 [DRUG DESIGN]	4	4	75	25	
	OR Paper 15 [PHARMACOLOGY]	4	4	75	25	100
Elective 4	Paper 16 [BIOPHARMACEUTICS AND PHARMACOKINETICS]	4	4	75	25	100
	OR Paper 16 [APPLIED PHARMACEUTICS - II]	4	4	75	25	
Practical 7	Practical [LAB COURSE -I]	6	3	75	-	75
Practical -8	Practical [LAB COURSE -II]	6	3	75	-	75
Internship		4	4	50	50	100
		34	28			650
	Total	100	100			2500

Note :-

- 1- Minimum passing marks will be 40% for each Theory, Practical, CCE, Internship/Project.

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Government Holkar (Model Autonomous) Science College, Indore
Department of Physics
Scheme for Session 2020-2021

Programme: M.Sc. Physics

Class: M.Sc. I Semester

S.N	Paper	Course Title	Course Code	Credits	CCE	CCE	External	External	total	Total
					(Max)	(Minimum)	Assessment	Assessment	Max	Mini
							Max.	mini		
1	Core 1	Mathematical Physics	PH11	4	25	9	75	26	100	35
2	Core 2	Classical Mechanics	PH12	4	25	9	75	26	100	35
3	Core 3	Quantum Mechanics- I	PH13	4	25	9	75	26	100	35
4	Core 4	Electronic Devices	PH14	4	25	9	75	26	100	35
5	Practical 1	General Physics	PH15	3	—	—	75	—	—	26
6	Practical 2	Electronic Physics	PH16	3	—	—	75	—	—	26
7	Seminar I	Presentation (PPT Mode)	PH17	1	—	—	25	—	—	9
8	Seminar II	Tutorial	PH18	1	—	—	25	—	—	9
Total				24	100	—	500	—	600	—


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Government Holkar (Model Autonomous) Science College, Indore
Department of Physics
Scheme for Session 2020-2021

Programme: M.Sc. PHYSICS

Class : M.Sc. III Semester

S. No	Paper	Course Title	Course Code	Credits	CCE (Max)	CCE (Minimum)	External Assessment Max.	External Assessment mini	total Max	Total Mini
1	Core 9	Condensed matter Physics-I	PH 31	4	25	9	75	26	100	35
2	Core 10	Nuclear and particle Physics	PH 32	4	25	9	75	26	100	35
3	Core 11	Digital electronics	PH 33	4	25	9	75	26	100	35
4	Core 12	Atomic and molecular Physics	PH 34	4	25	9	75	26	100	35
5	Open Elective (Inter disciplinary)	Computer Application	PH 35 A	4	25	9	75	-	100	35
		Environmental Biology	PH 35 B							
6	Practical-5	General Physics	PH 36	3	-	-	75	-	75	26
7	Practical-6	Electronics Physics	PH 37	3	-	-	75	-	75	26
Total				26	125	-	525	-	650	


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Government Holkar (Model Autonomous) Science College, Indore
Department of Physics
Scheme for Session 2020-2021

Programme :M.Sc. PHYSICS

Class :M.Sc. IV Semester

S. No	Paper	Course Title	Course Code	Credits	CCE (Max)	CCE (Minimum)	External Assessment Max.	External Assessment mini	total Max	Total Mini	
1	Core 13	Condensed Matter Physics-II	PH 41	4	25	9	75	26	100	35	
2	Core 14	Laser Physics	PH 42	4	25	9	75	26	100	35	
3	Elective 1	Computer Programming and Informatics	PH 43 A	4	25	9	75	26	100	35	
	Elective 2	Computational Methods and Programming	PH 43B								
4	Elective 3	Communication Electronics	PH 44 A	4	25	9	75	26	100	35	
	Elective 4	Renewable Energy Resources	PH 44B								
6	Practical-7	General Physics	PH 45	3	-	-	75	-	75	26	
7	Practical-8	Electronics Physics	PH 46A	3	-	-	75	-	75	26	
		Renewable Energy Resources	PH 46 B								
8	Internship/Project		PH 47	4	-	-	-	-			
Total					26	125	-	525	-	650	


Note : Paper 3: Choice Elective 1 Or Elective 2

Paper 4: : Choice Elective 3 Or Elective 4, Practical 8 Choice : if Elective 3 PH44A then PH46A ,Practical 8 Choice :If Elective 4 PH44 B then PH46 B


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**GOVT. MODEL AUTONOMOUS HOLKAR SCIENCE
COLLEGE, INDORE (M.P.)
M.Sc. IInd Sem. Statistics
Session 2020-2021**

**Scheme of Examination based on
Choice Based Credit System (CBCS Pattern)**

SEMESTER TWO

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Minimum Passing Marks 35%
Core 5	Paper 5 – Linear Algebra	4	4	75	25	35
Core 6	Paper 6 – Distribution Theory – II	4	4	75	25	35
Core 7	Paper 7– Statistical Computing	4	4	75	25	35
Core 8	Paper 8 – Statistical Inference -I	4	4	75	25	35
Practical-3	Practical based on Theory paper 5 & 6	6	3	75	-	27
Practical-4	Practical based on Theory paper 7 & 8	6	3	75	-	27
Seminar	Seminar 3	1	1	-	25	9
	Seminar 4/Field Trip/Ind. Visit etc	1	1	-	25	9
		30	24			

Note : Minimum Passing marks will be 35% in each theory, Practical, CCE & Internship/Project.



GOVT. HOLKAR SCIENCE COLLEGE, INDORE (M.P.)

DEPARTMENT OF STATISTICS

M.Sc. IIIrd Sem. Statistics

Session 2020-2021

**Scheme of Examination based on
Choice Based Credit System (CBCS Pattern)**

SEMESTER THREE

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme			
				Ext.	Int.	Total	Minimum Passing Marks 35%
Core 9	Paper 9 – Multivariate Analysis	4	4	75	25	100	35
Core 10	Paper 10 – Linear Models	4	4	75	25	100	35
Elective 1	Paper 11 – Operation Research (Elective 1)	4	4	75	25	100	35
	OR Demography (Elective 1)						
Elective 2	Paper 12 – Programming with Language 'C' (Elective 2)	4	4	75	25	100	35
	OR Statistical Inference – II (Elective 2)						
Open Elective 1 Inter-disciplinary	Paper -13 Elect any one from Interdisciplinary papers (out of given group)	4	4	75	25	100	35
Practical -5	Practical based on paper 9 & 10	6	3	75	-	75	27
Practical -6	Practical based on paper 11 & 12	6	3	75	-	75	27
		32	26				

Note : Minimum Passing marks will be 35% in each theory, Practical, CCE & Internship/Project.

















GOVT. HOLKAR SCIENCE COLLEGE, INDORE (M.P.)
DEPARTMENT OF STATISTICS
M.Sc. IVth Sem. Statistics
Session 2020-2021

**Scheme of Examination based on
Choice Based Credit System (CBCS Pattern)**

SEMESTER FOUR

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme			
				Ext.	Int.	Total	Minimum Passing Marks 35%
Core 11	Paper 13 – Design of Experiments	4	4	75	25	100	35
Core 12	Paper 14 – Statistical Quality Control	4	4	75	25	100	35
Elective 3	Paper 15 – Advanced Operation Research	4	4	75	25	100	35
	OR Official Statistics						
Elective 4	Paper 16 – Econometrics	4	4	75	25	100	35
	OR						
	Stochastic Processes						
	OR Project						
Practical -7	Practical based on paper 13 & 14	6	3	75	-	75	27
Practical -8	Practical based on paper 15 & 16	6	3	75	-	75	27
Internship		4	4	50	50	100	35
		34	28				
	Grand Total	100	100				

Note : Minimum Passing marks will be 35% in each theory, Practical, CCE & Internship/Project.

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Sarita

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GOVT. HOLKAR (MODEL, AUTONOMOUS) SCIENCE COLLEGE, A.B. Road, INDORE
SYLLABUS OF M.Sc. ZOOLOGY
SCHEME OF EXAMINATION SESSION 2020- 2021
CHOICE BASED CREDIT SYSTEM (CBCS)

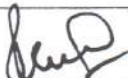
M. Sc. I semester

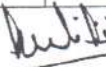
Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -1	Paper -1: Biosystematics, Taxonomy and Evolution	4	4	75	25	100
Core -2	Paper -2 : Structure and Function of Invertebrates	4	4	75	25	100
Core -3	Paper -3: Quantitative Biology. Biodiversity and Wildlife	4	4	75	25	100
Core -4	Paper -4 : Bimolecules and Structural Biology	4	4	75	25	100
Practical - 1	Practical (Based on Theory Paper 1 & 2)	6	3	75	-	75
Practical - 2	Practical (Based on Theory Paper 3 & 4)	6	3	75	-	75
Seminar	Seminar -1	1	1	-	25	25
	Seminar 2/Field Trip/Ind. Visit.	1	1	-	25	25
		30	24	-	-	600

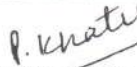
M. Sc. II Semester


Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -5	Paper -5 :General and Comparative Animal Physiology and Endocrinology	4	4	75	25	100
Core -6	Paper -6 : Population Ecology and Environmental Physiology	4	4	75	25	100
Core -7	Paper -7 : Tools and Techniques in Biology	4	4	75	25	100
Core -8	Paper -8 : Molecular Cell Biology and Genetics	4	4	75	25	100
Practical - 3	Practical (Based on Theory Paper 5 & 6)	6	3	75	-	75
Practical - 4	Practical (Based on Theory Paper 7 & 8)	6	3	75	-	75
Seminar	Seminar -3	1	1	-	25	25
	Seminar - 4/Field trip/Ind. Visit.	1	1	-	25	25
		30	24	-	-	600


 (Dr. Lata Bhattacharya)
 Subject Expert


 (Dr. Ruchira Choudhary)
 Subject Expert


 (Dr. Kirti Tiwari)
 VC Member


 (Dr. Pratima Khatri)
 Industrial Member


 (Dr. Rekha Sharma)
 Chairman & Head

(Mrs. Yashasvi Kaurav)
 Student representative

GOVT. HOLKAR (MODEL, AUTONOMOUS) SCIENCE COLLEGE, A.B. Road, INDORE
 SYLLABUS OF M.Sc. ZOOLOGY
 SCHEME OF EXAMINATION SESSION 2020- 21
 CHOICE BASED CREDIT SYSTEM (CBCS)
 M. Sc. III Semester

Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -9	Paper -9 : Comparative Anatomy of Vertebrates	4	4	75	25	100
Core -10	Paper -10 : Eco-Toxicology	4	4	75	25	100
Elective -1	Paper -11: (Elective-1) Limnology OR	4	4	75	25	100
	Paper -11: (Elective-1) Immunology	4	4	75	25	100
Elective -2	Paper -12: (Elective -2) Aquaculture OR	4	4	75	25	100
	Paper -12: (Elective -2) Cellular Organization and Molecular Organization	4	4	75	25	100
Open Elective I Inter-disciplinary	Paper -13: (Out of given group) – Basic of Bioinformatics	4	4	75	25	100
Practical - 5	Practical (Based on Theory Paper 9 & 10)	6	3	75	-	75
Practical - 6	Practical (Based on Theory Paper 11 & 12)	6	3	75	-	75
		32	26	-	-	650

M. Sc. IV Semester

Code	Theory/Practical	Teaching Hours/Week	Credit	Examination Scheme		
				External	Internal	Total
Core -11	Paper -14: Animal Behavior and Neurophysiology	4	4	75	25	100
Core -12	Paper -15 Gamete, Biology, Development and Differentiation	4	4	75	25	100
Elective - 3	Paper -16: (Elective -3) Ichthyology (Fish Structure and Function) OR	4	4	75	25	100
	Paper -16: (Elective -3) Biology of Parasite	4	4	75	25	100
Elective - 4	Paper -17: (Elective -4) Pisci Culture and Economic Importance of Fishes (Ichthyology) OR	4	4	75	25	100
	Paper -17 :(Elective -4) Cell Biology OR	4	4	75	25	100
	Project	4	4	75	25	100
Practical- 7	Practical (Based on Theory Paper 14 & 15)	6	3	75	-	75
Practical- 8	Practical (Based on Theory Paper 16 & 17)	6	3	75	-	75
Internship		4	4	50	50	100
		32	26	-	-	650
	Total	100	100	-	-	2500

(Dr. Lata Bhattacharya)
Subject Expert

(Dr. Rachira Choudhary)
Subject Expert

(Dr. Kirti Tiwari)
VC Member

(Dr. Pratima Khatri)
Industrial Member

(Dr. Rekha Sharma)
Chairman & Head

(Mrs. Yashasvi Kaurav)
Student representative



Syllabus of M.Sc. Forensic Science for the year 2020-21 (CBCS based)

CBCS Scheme for M.Sc. Forensic Science for the year 2020-21

Semester First

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 1	Paper 1 (Forensic Science and Criminal Justice System)	4	4	75	25	100
Core 2	Paper 2 (Forensic Medicine)	4	4	75	25	100
Core 3	Paper 3 (Questioned Documents, Fingerprints & Other Prints)	4	4	75	25	100
Core 4	Paper 4 (Instrumental Methods – Physical)	4	4	75	25	100
Practical -1	Practical based on Theory paper 1 & 2	6	3	75	-	75
Practical-2	Practical based on Theory paper 3 & 4	6	3	75	-	75
Seminar	Seminar 1 st	1	1	-	25	25
	Seminar 2nd/Field trip/Industrial Visit.	1	1	-	25	25
		30	24			600

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Syllabus of M.Sc. Forensic Science for the year 2020-21 (CBCS based)

Semester Second

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 5	Paper 5 (Instrumental Methods –Chemical)	4	4	75	25	100
Core 6	Paper 6 (Forensic Biology)	4	4	75	25	100
Core 7	Paper 7 (Forensic Chemistry & Explosives)	4	4	75	25	100
Core 8	Paper 8 (Forensic Toxicology & Pharmacology)	4	4	75	25	100
Practical-3	Practical based on paper 5 & 6	6	3	75	-	75
Practical-4	Practical based on paper 7 & 8	6	3	75	-	75
Seminar "or"	Seminar 3 rd	1	1	-	25	25
	Seminar 4 th / Field Trip/ Industrial Visit etc.	1	1	-	25	25
Academic tour	Academic Tour for one week	2	2	-	50	50
		30	26			600

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Syllabus of M.Sc. Forensic Science for the year 2020-21 (CBCS based)

Semester Third

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 9	Paper 9 (Forensic Ballistics)	4	4	75	25	100
Core 10	Paper 10 (Instrumental Methods –Biological)	4	4	75	25	100
Elective 1	Paper 11 (A) (Forensic Serology) OR Paper 11 (B) (Fingerprints, Impressions & their examination)	4	4	75	25	100
Elective 2	Paper 12 (A) (DNA Profiling) OR Paper 12 (B) (Pharmaceutical Jurisprudence)	4	4	75	25	100
Open Elective 1 Inter-disciplinary	Open Paper (Will be selected out from inter- disciplinary approved list of papers)	4	4	75	25	100
Practical -5	Practical based on paper 9 & 10	6	3	75	-	75
Practical -6	Practical based on paper 11(A) & 12(A)/ 11(B) & 12(B)	6	3	75	-	75
		32	26			650

Note - Combination of Paper 11 (A) with Paper 12 (A)

Combination of Paper 11 (B) with Paper 12 (B)

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Syllabus of M.Sc. Forensic Science for the year 2020-21 (CBCS based)

Semester Fourth

Code	Theory/Practical	Teaching hours/week	Credit	Examination Scheme		
				External	Internal	Total
Core 11	Paper- 13 (Forensic Physics)	4	4	75	25	100
Core 12	Paper -14 (Applied Forensic Science and Scientific Investigation of Crime)	4	4	75	25	100
Elective 3	Paper- 15 (A) (Emerging Trends in Forensic Science) OR Paper-15 (B) (Forensic Psychology)	4	4	75	25	100
Elective 4 / Project	Paper- 16 (A) (Biometrics) OR Paper- 16 (B) (Computer & Cyber Forensics)	4/8	4	75	25	100
Practical -7	Practical based on paper 13 & 14	6	3	75	-	75
Practical -8	Practical based on paper 15 (A) & 16 (A) \ 15 (B) & 16 (B)	6	3	75	-	75
Internship		4	4	50	50	100
		32	26			650
	Total	124	102			2500

Note:- Combination of Paper- 15 (A) with Paper- 16(A)
Combination of Paper- 15 (B) with Paper- 16 (B)

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Syllabus of M.Sc. Forensic Science for the year 2020-21 (CBCS based)

Note:-

1. Where Field Visit is involved, it will be in place of one seminar and will carry 25 marks.
2. Where Academic tour (1 week at least) is involved, it will be in place of two seminar and will carry 50 marks. Department will arrange tour either in 1st Sem or in 2nd Sem.
3. Minimum passing marks will be 40% each in Theory, Practical, CCE and Internship/ Project.
4. Grades and Grade points will be as follows:

Letter Grade	Grade Point
O (Outstanding)	10
A+ (Excellent)	9
A (Very Good)	8
B+ (Good)	7
B (Above Average)	6
C (Average)	5
P (Pass)	4
F (Fail)	Less than 4
Ab (Absent)	0

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