Minutes of 4th meeting of BOS in Faculty of Science held on 09/08/2023 at 11:00 A.M. in the Conference Hall, Admin. Block, P.K. University

1. Prof. (Dr.) Ranjit Singh	Chairman
2. Prof. (Dr.) G. Pawan Kumar	Member
3. Dr. Mahalaxmi Johri	Member
4. Dr. Ashish Vishwakarma	Member
5. Dr. Praveen Kumar	Member
6. Dr. Brijesh Shivhare	Member
7. Mr. Gaurav Saxena	Member
8. Ms. Ayushi Chaurasiya	Member
9. Dr. Vikrant Sharma	Member
10. Dr. Meenu Gupta	Member
11. Mrs. Shweta Sharma	Member
12. Mr. Ashish pratap Singh	Member
External Expert	
13. Dr. Sanjeev Srivastva	Member
Special Invitee	
14. Dr. Deepesh Namdev	Member
15. Dr. Bhaskar Nalla	Member
16. Mrs. Nisha Yadav	Member
17. Mr. Pankaj Singh	Member

The agenda items of the meeting were taken up by the BOS one by one as follows:

Agenda no. 01: To Confirm minutes of previous meeting of Board of Studies held on 13.12.2022.

- The BOS meeting confirmed the minutes of the previous meeting of the BOS held on 13.12.2022 as given in agenda 1 from page 1 to 3.

Agenda no. 02: Action taken on the minutes of previous Board of Studies held on 13.12.2022.

- The action taken on the previous meeting of BOS held on 13.12.2022. was presented to the BOS & same were noted. as given in agenda 2 from page 4 to 5.

Agenda no. 03: Approval of Scheme and syllabus of various B.Sc. courses as per 52(A) of NEP.

- The new schemes and syllabus of various courses B.Sc. 1st & IInd semester in Faculty of Science were discussed before the BOS. After detail discussion, the BOS meeting approved the same. as given in agenda 3 from page 6 to 22.

Agenda no. 04: Approval of Scheme and Syllabus of various M.Sc. (1st - 4th Semester) degree courses.

- The new schemes and syllabus of various courses of M.Sc. 1st to 4th semester in Faculty of Science were discussed before the BOS. After detail discussion, the BOS meeting approved the same. as given in agenda 04 from page 23 to 34.

Agenda no. 05: Approval of scheme and syllabus of various B.Sc. 3rd year degree courses as per 52(B).

- The new schemes and syllabus of various courses of B.Sc. 3rd year in Faculty of Science were discussed before the BOS. After detail discussion, the BOS meeting approved the same. as given Agenda 05 from page 35 to 39.

Agenda no. 06: Approval of rules in addition to ordinance 52 (A) (Under Graduate Courses)

To approve rules in addition to ordinance 52A (as per NEP) and common to all graduate course in faculty of Science were presented to the meeting of BOS and same as approved in the meeting. as given agenda 06 from page 40-44.

Agenda no. 07: Approval of scheme and syllabus of various [redacted] Ph.D. for part time Programme.

- The new schemes and syllabus of various courses B.Sc., M.Sc., and Ph.D. for part time Programme in Faculty of Science were discussed before the BOS. After detail discussion, the BOS meeting approved the same. asgiven Agenda 07 from page 45 to 63

Agenda no. 08: Any other matter with the permission of the Chairman.

- Nil as given Agenda 08 from page 64.

1. Prof. (Dr.) Ranjit Singh
2. Dr. Sanjeev Srivastava
3. Prof. (Dr.) G. Pawan Kumar
4. Prof. (Dr.) Mahalaxmi Johri
5. Dr. Ashish Vishwakarma
6. Dr. Praveen Kumar
7. Dr. Brijesh Shivhare
8. Mr. Gaurav Saxena
9. Ms. Ayushi Chaurasiya
10. Dr. Vikram Sharma
11. Dr. Meenu Gupta
12. Mrs. Shweta Sharma
13. Mr. Ashish pratap Singh
14. Dr. Deepesh Nandev
15. Dr. Shankar Nali
16. Ms. Nisha Yadav
17. Mr. Pankaj Singh

P.K.UNIVERSITY
SHIVPURI (M.P.)

University Established Under section 2f of UGC ACT 1956 Vide MP Government Act No 17 of 2015

4TH MEETING OF THE BORD OF STUDIES

AGENDA

(FOR MEMBER ONLY)

Date of Meeting: - 09/08/2023

Time of Meeting: - 11:00AM

Venue of Meeting: - Conference Hall, Administrative Block

ADDRESS: VILL: THANRA, TEHSIL: KARERA, NH-27, DIST: SHIVPURI, M.P. 473665,
MOB: 7241115088, Email:registrar.pkuniversity@gmail.com

P.K.UNIVERSITY
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University Established Under section 2f of UGC ACT 1956 Vide MP Government Act No 17 of 2015

Ref No. F7 (9)/1

Date: 07/08/2023

NOTICE

4th BOARD OF STUDIES MEETING
(Faculty of Science on 09/08/2023)

Faculty of **Science** on the **4th Board of Studies Meeting is scheduled on 09 August 2023 at P.K. University Campus Shivpuri** at 11:00 Am in Conference Hall at Administrative Block under the Chairmanship of Prof. (Dr.) Ranjit Singh (Vice Chancellor).

The following Committee members were presented at the meeting;

1. Prof. (Dr.) Ranjit Singh	Chairman
2. Prof. (Dr.) G. Pawan Kumar	Member
3. Prof.(Dr.) Mahalaxmi Johri	Member
4. Dr. Ashish Vishwakarma	Member
5. Dr. Praveen Kumar	Member
6. Dr. Brijesh Shivhare	Member
7. Dr. Vikrant Sharma	Member
8. Dr. Meenu Gupta	Member
9. Mr. Gaurav Saxena	Member
10. Mr. Ashish Pratap Singh	Member
11. Mrs. Shweta Sharma	Member
12. Ms. Ayushi Chaurasiya	Member
External Expert:-	
1- Dr. Sanjeev Srivastava	Member
Special Invitees	
1- Dr. Deepesh Naamdev	Member
2- Dr. Bhaskar Nalla	Member
3- Ms. Nisha Yadav	Member
4- Mr. Pankaj Singh	Member

Dean Academic

Copy to: -
1. VC Office
2. Director Admin
3. Registrar off.
4. All HOD's
5. Dy Registrar
6. All Asst. Registrar
7. Guard file

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SHIVPURI (M.P.)

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Ref. No's: PKU/FOC/2023/Board Of Studies/ **Date.:3/08/2023**

To,

The Members
Board of Studies
Faculty of Science
P.K. University, Shivpuri (M.P.)

Subject: - 4th Boards of Studies Meeting of Faculty of Science

Dear Ma'am/Sir

The 4th Board of Studies Meeting is scheduled on 09August 2023 at P.K. University Campus Shivpuri as per directives of M.P. Government Statute no. 19 to finalize the Syllabus of B.Sc. Degree courses as per NEP pattern from the academic session 2023 – 2024. You are requested to kindly grace the meeting.

PROGRAMME:

Date of Meeting : - 09/08/2023
Time of Meeting : - 11:00 AM Onwards
Venue of Meeting: - Conference Hall (Administrative Block) P.K. University Shivpuri M.P.

With Kind Regards

Dean Academic
P.K. University, Shivpuri (M.P.)

Copy to Kind Information:
1-PS to Chancellor for kind information of the Hon'able Chancellor, P.K. University, Shivpuri (M.P.)
2-PS to VC for kind information of the Hon'able Vice-Chancellor, P.K. University, Shivpuri (M.P.)
3-Director (Admin.)Office, P.K. University, Shivpuri (M.P.)
4-Dean Academic Office, P.K. University, Shivpuri (M.P.)

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MOB: 7241115088, Email:registrar.pkuniversity@gmail.com

P.K.UNIVERSITY
SHIVPURI (M.P.)

University Established Under section 2f of UGC ACT 1956 Vide MP Government Act No 17 of 2015

Ref. No's: PKU/FOC/2023/Board Of Studies/ **Date: 07 /08/2023**

To,
Dr. Sanjeev Srivastva
Head of Department
Department of Physics
Bundelkhand University, Jhansi

Subject: - 4th Boards Of Studies Meeting of Faculty of Science

Dear Ma'am/Sir

The 4th Board of Studies Meeting is scheduled on 09August 2023 at P.K. University Campus Shivpuri as per directives of M.P. Government Statute no. 19 to finalize the Syllabus of B.Sc. Degree courses as per NEP pattern from the academic session 2023 – 2024. You are requested to kindly grace the meeting.

PROGRAMME:
Date of Meeting : - 09/08/2023
Time of Meeting : - 11:00 AM Onwards
Venue of Meeting : - Conference Hall (Administrative Block) P.K. University, Shivpuri M.P.

With Kind Regards

8/8/23

Dean Academic
P.K. University, Shivpuri (M. P.)

Copy to Kind Information:
1-PS to Chancellor for kind information of the Hon'able Chancellor, P.K. University, Shivpuri (M.P.)
2-PS to VC for kind information of the Hon'able Vice-Chancellor, P.K. University, Shivpuri (M.P.)
3-Director (Admin.) Office, P.K. University, Shivpuri (M.P.)
4-Dean Academic Office, P.K. University, Shivpuri (M.P.)

P.K.UNIVERSITY
SHIVPURI (M.P.)

University Established Under section 2f of UGC ACT 1956 Vide MP Government Act No 17 of 2015

Ref No. PKU/FOS/2023/Board of Studies Date: /08/2023

AGENDA OF THE 4th BOARD OF STUDIES OF FACULTY OF SCIENCE, P.K. UNIVERSITY, SHIVPURI (M.P.)

Agenda no. 01

- Confirmation of the previous meeting of Board of Studies held on 13.12.2022.

Agenda no. 02

- Action taken on the minutes previous of Board of Studies held on 13.12.2022.

Agenda no. 03

- Approval of Scheme and Syllabus of various B.Sc. 1st and 2nd semester syllabus as per 52(A) NEP.

Agenda no. 04

Approval of Scheme and Syllabus of various M.Sc.(1st-4th Semester)degree course.

Agenda no. 05

- Approval of Scheme and Syllabus of various B.Sc. 3rd Year degree course as per 52(B).

Agenda no. 06

- Approval of rules in addition to ordinance 52 (A) for BSc (Under Graduate Courses).

Agenda no. 07

- Approval of scheme and syllabus of various [redacted] PhD. for part time programme.

Agenda no. 08

- Any other matter with the permission of Chairman.

Dean Academic

Copy to:

1. Office of the Vice – Chancellor
2. Office of the Director(Administration)
3. Office of the Registrar
4. Office of the Assistant Registrar
5. Office of the Exam- Cell
6. Copy to all the Members with the Request to attend the meeting.

ADDRESS: VILL: THANRA, TEHSIL: KARERA, NH-27, DIST: SHIVPURI, M.P. 473665,
MOB: 7241115088, Email:registrar.pkuniversity@gmail.com

P.K.UNIVERSITY
SHIVPURI (M.P.)

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ABBREVIATION SUBJECT CODES

S. No.	Faculty Wise S. No.	Subject	Code
1	1	Common Paper for D/G/U/M/P	CP
Faculty of Art			AR
2	1	Hindi	HI
3	2	Sociology	SO
4	3	English	EN
5	4	Sanskrit	SA
6	5	Political Science	PO
7	6	Home Science	HO
8	7	Psychology	PH
9	8	Geography	GE
10	9	Economics	EO
11	10	Social Work	SW
12	11	Public Administration	PA
13	12	History	HT
14	13	Education	ED
15	14	Library Science	LS
Faculty of Engineering			
16	1	Digital Communication	DC
17	2	Digital Electronics	DE
18	3	Electronics & Communication	EC
19	4	Electrical Engineering	EE
20	5	Electrical & Electronics Engineering	EX
21	6	Mechanical Engineering	ME
22	7	Civil Engineering	CE
23	8	Information Technology	IT
24	9	Chemical Engineering	CH
25	10	Agriculture Engineering	AE
26	11	Automobile Engineering	AU
27	12	Production Engineering	PE

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28	13	Computer Science & Engineering	CO
29	14	Power System	PS
30	15	Structural Engineering	SE
31	16	Transportation Engineering	TE
32	17	Construction, Planning & Management Engineering	CE
33	18	Farm Machinery & Power Engineering	FE
34	19	Irrigation & Drainage Engineering	ID
35	20	Soil & Water Conservation	SC
36	21	Thermal Engineering	TH
37	22	VLSI Design	VL
38	23	Artificial Intelligence & Machine Learning	AI
39	24	Data Science	DS
40	25	Internet of Things	IO
41	26	Robotics (M. Tech)	RO
42	27	Remote Sense (M. Tech)	RS
Faculty of Management			**MG**
43	1	Marketing Management	MM
44	2	Human Resources	HR
45	3	Finance Management	FM
46	4	Information Technology	IT
47	5	Hospital Management	HM
48	6	Healthcare Management	HC
49	7	Agri-Business Marketing	AM
50	8	Livestock Products Management	LP
51	9	Supply-Chain Management	SM
52	10	Operation Management	OM
Faculty of Science			**SC**
53	1	Physics	PH
54	2	Zoology	ZO
55	3	Botany	BO
56	4	Chemistry	CH
57	5	Mathematics	MA
58	6	Microbiology	MB
59	7	Biochemistry	BC
60	8	Biotechnology	BT
61	9	Computer Science	CS
62	10	Food Technology	FT
Faculty of Computer Science & Application			**CA**
63	1	Computer Science & Application	CA
Faculty of Commerce			**CM**
64	1	Management of Services	MS
65	2	Banking & Insurance	BI

66	3	Human Resource Development	HD
67	4	Financial Analysis and Control	FC
68	5	Marketing Management	MM
Faculty of Law			**LA**
69	1	Criminal Group	CR
70	2	Constitution Group	CO
71	3	Corporate Group	CG
Faculty of Paramedical*			
72	1		
Faculty of Medical*			
73	1		
Faculty of Nursing*			
74	1		
Faculty of Agriculture*			
75	1	Agronomy	
76	2	Agricultural Extension	
77	3	Horticulture	
78	4	Seed Technology	
Faculty of Pharmacy*			
79	1	Pharmaceutical Chemistry	PC
80	2	Pharmaceutics	PH
81	3	Pharmacology	PL
82	4	Pharmacognosy	PG
Research Cell			**DR**
83	1	Common Research Paper	RC
84	2	Viva-Voice	VIVA

*As per Council Body

Course Indication:

D - For Diploma
G - For Post Graduate Diploma
U - For Under Graduate
M - For Post Graduate
P - For Research Scholar

Please use this code formula to generate the subject code

Course Indication + First Four Letter Subject Name + Serial No = Subject Code

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CONTENT OF THE BOS OF THE 4th BOARD OF STUDIES OF FACULTY OF SCIENCE

TABLE OF CONTENT

AGENDA OF THE 4th BOARD OF STUDIES OF FACULTY Of SCIENCE.

AGENDA NO. 01

Confirmation of the previous meeting of Board of Studies held on 13.12.2022.

ADDRESS: VILL: THANRA, TEHSIL: KARERA, NH-27, DIST: SHIVPURI, M.P. 473665,
MOB: 7241115088, Email:registrar.pkuniversity@gmail.com

Minutes of 3rd meeting of BoS in Faculty of Science held on 13/12/2022 at 2:30 p.m. in the Conference Hall, Admin. Block, P.K. University

Minutes of 3rd meeting of BoS in Faculty of Science held on 13/12/2022 at 2:30 p.m. in the Conference Hall, Admin. Block. The following members were present in the meeting:

1. Prof. (Dr.) Ranjit Singh	Chairman
2. Dr. Sanjeev Srivastava	Member
3. Dr. Pratibha chauhan	Member
4. Mr. Praveen Kumar	Member
5. Mr. Gaurav Saxena	Member
6. Dr. Vikrant Sharma	Member
7. Dr. Mahalaxmi Johri	Member
8. Dr. Neelesh Maurya	Member
9. Mrs. Shweta Sharma	Member
10. Dr. Nandni Samadhiya	Member
11. Mr. Ashish pratap Singh	
Special Invitee	
12. Dr. Deepesh Nandev	Member
13. Dr. Naila Bhaskar	Member
14. Ms. Nisha Yadav	Member
15. Mr. Pankaj Singh	Member

The agenda items of the meeting were taken up by the BoS one by one as follows:

Agenda no. 01: To Confirm minutes of previous meeting of Board of Studies held on 26.02.2022

- The BoS meeting confirmed the minutes of the previous meeting of the BoS held on 26.02.2022

Agenda no. 02: Action taken on the minutes of previous Board of Studies held on 26.02.2022

- The action taken on the previous meeting of BoS held on 26/12/2022 was presented to the BoS & same were noted.

Agenda no. 02(a): To approve the coursework in Science for PhD courses.

- The coursework for PhD in Science subject was discussed and examination scheme and syllabus was enclosed.

Agenda no. 03: Approval of Scheme and syllabus of various B.Sc. courses (1st and 2nd year) as per 52B of NEP.

- The new schemes and syllabus of various courses B.Sc. 1st and 2nd year in Faculty of Science were discussed before the BoS. After detail discussion, the BoS meeting approved the same.

Agenda no. 04: Approval of credit system in the existing post graduate courses of Faculty of Science.

- The scheme of credit implementation in existing post graduate courses of Faculty of Science in M.Sc. 1st year was discussed in meeting of BoS and same was passed after detailed discussion.

Agenda no. 05: Approval of rules in addition to ordinance 52B and common to all graduate courses.

- To approve rules in addition to ordinance 52B (as per NEP) and common to all graduate courses in Faculty of Science were presented to the meeting of BoS and same were approved in the meeting.

Agenda no. 06: Any other matter with the permission of the Chairman.

- Nil.

1. Prof. (Dr.) Ranjit Singh 13-12-2022
2. Dr. Sanjeev Srivastava 13/12/2022
3. Dr. Pratibha chauhan 13/12/22
4. Mr. Praveen Kumar 13/12/22
5. Mr. Gaurav Saxena 13-12-22
6. Dr. Vikram Sharma
7. Dr. Mahalaxmi Johri
8. Dr. Neelesh Maurya 13-12-22
9. Mrs. Shweta Sharma
10. Dr. Nandini Samadhiya 13/12/22
11. Mr. Ashish pratap Singh 13/12/22
12. Dr. Deepesh Namdev 13.12.2022
13. Dr. Nalla Bhaskar 13/12/22
14. Ms. Nisha Yadav 13.12.22
15. Mr. Pankaj Singh 13/12/22

AGENDA OF THE 4th BOARD OF STUDY OF FACULTY Of SCIENCE.

AGENDA NO. 02

Action taken on the minutes previous of Board of Studies held on 13.12.2022.

P.K. University, Shivpuri (M.P.)

Ref. No: F (7) 9-1/1 **Date:-** 7/8/23

Faculty of Science

Action Taken on Minutes of BOS held on 13/12/2022

Agenda NO.	Description	Action
1	Minutes of 3rd meeting of BOS	Confirmed
2	The Action taken on 3rd meeting of BOS, FoS was presented in the meting	Noted
3	Approval of Scheme and Syllabus of various BSc Courses (1st & 2nd Year) as per 52(B) of NEP	Implemented
4	Approval of credit system in the existing PG courses of Faculty of science.	Implemented
5	Approval of Rules in addition to Ordinance 52(B) and common to all Graduate Courses.	Implemented

5

Department of Science

AGENDA OF THE 4th BOARD OF STUDIES OF FACULTY Of SCIENCE.

AGENDA NO. 03

Approval of Scheme and Syllabus of various B.Sc. 1ST & 2ND Semester course syllabus as per 52(A) NEP.

ADDRESS: VILL: THANRA, TEHSIL: KARERA, NH-27, DIST: SHIVPURI, M.P. 473665,
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P.K.University
Shivpuri (M.P.)

Faculty of Science

Scheme
For
B. Sc.

(I SEMESTER COURSE)

W.E.F. - Session 2023 - 2024

P.K.UNIVERSITY SHIVPURI (M.P.)

B.Sc. 1st Semester Course Structure – Faculty of Science

Compulsory courses for B.Sc. 1st semester students (Level 5)

S. No.	Course	Subjects/Paper type/Total Credits	Paper Title	Paper Code	Credits	: Lecture T: Tutorial P: Practical			Distribution of Theory Marks		Distribution of Practical Marks		Total Marks (CCE+UE)
						L	T	P	CCE	UE	CCE	UE	
1.	PHYSICS	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		PHYSICS/ Major/6	Mechanics and General Properties of Matter	UMECHPH101	4	4	0	0	40	60	0	0	100
3.			Lab Course Physics I	ULABCPH102	2	0	0	4	0	0	40	60	100
4.		MATHEMATICS/Minor /6	Algebra, Vector Analysis and Geometry	UALGEMA101	6	6	0	0	40	60	0	0	100
5.		CHEMISTRY/GE/4	Fundamental of Chemistry	UFUNDCH101	3	3	0	0	40	60	0	0	100
6.			Lab Course Chemistry I	ULABCCH102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**200**	**600**

1.	**MATHEMATICS**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		MATHEMATICS/ Major/6	Algebra, Vector Analysis and Geometry	UALGEMA101	6	6	0	0	40	60	0	0	100
3.		PHYSICS/Minor/6	Mechanics and General Properties of Matter	UMECHPH101	4	4	0	0	40	60	0	0	100
4.			Lab Course Physics I	ULABCPH102	2	0	0	4	0	0	40	60	100
5.		CHEMISTRY/GE/4	Fundamental of Chemistry	UFUNDCH101	3	3	0	0	40	60	0	0	100
6.			Lab Course Chemistry I	ULABCCH102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**200**	**600**
1.	**COMPUTER SCIENCE**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		COMPUTER SCIENCE / Major/6	Computer System Architecture	UCOMPCS101	4	4	0	0	40	60	0	0	100
3.			Lab Course Computer I	ULABCCS102	2	0	0	4	0	0	40	60	100
4.		PHYSICS/Minor/6	Mechanics and General Properties of Matter	UMECHPH101	4	4	0	0	40	60	0	0	100
5.			Lab Course Physics I	ULABCPH102	2	0	0	4	0	0	40	60	100
6.		MATHEMATICS /GE/4	Algebra, Vector Analysis and Geometry	UALGEMA101	4	4	0	0	40	60	0	0	100
	Total				**20**				**160**	**240**		**200**	**600**

1.	**BOTANY**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		BOTANY / Major/6	Applied Botany	UAPPLBO101	4	4	0	0	40	60	0	0	100
3.			Lab Course Botany I	ULABCBO102	2	0	0	4	0	0	40	60	100
4.		ZOOLOGY /Minor/6	Animal Diversity: Non-Chordata	UANIMZO101	4	4	0	0	40	60	0	0	100
5.			Lab Course Zoology I	ULABCZO102	2	0	0	4	0	0	40	60	100
6.		CHEMISTRY/GE/4	Fundamental of Chemistry	UFUNDCH101	3	3	0	0	40	60	0	0	100
7.			Lab Course Chemistry I	ULABCCH102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**
1.	**ZOOLOGY**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		ZOOLOGY / Major/6	Animal Diversity: Non-Chordata	UANIMZO101	4	4	0	0	40	60	0	0	100
3.			Lab Course Zoology I	ULABCZO102	2	0	0	4	0	0	40	60	100
4.		BOTANY /Minor/6	Applied Botany	UAPPLBO101	4	4	0	0	40	60	0	0	100
5.			Lab Course Botany I	ULABCBO102	2	0	0	4	0	0	40	60	100
6.		CHEMISTRY/GE/4	Fundamental of Chemistry	UFUNDCH101	3	3	0	0	40	60	0	0	100
7.			Lab Course Chemistry I	ULABCCH102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**

1.	**CHEMISTRY**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		CHEMISTRY / Major/6	Fundamental of Chemistry	UFUNDCH101	4	4	0	0	40	60	0	0	100
3.			Lab Course Chemistry I	ULABCCH102	2	0	0	4	0	0	40	60	100
4.		BOTANY /Minor/6	Applied Botany	UAPPLBO101	4	4	0	0	40	60	0	0	100
5.			Lab Course Botany I	ULABCBO102	2	0	0	4	0	0	40	60	100
6.		ZOOLOGY /GE/4	Animal Diversity: Non-Chordata	UANIMZO101	3	3	0	0	40	60	0	0	100
7.			Lab Course Zoology I	ULABCZO102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**
1.	**BIOTECHNOLOGY**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		BIOTECHNOLOGY / Major/6	Cell biology and Biochemistry	UCELLBT101	4	4	0	0	40	60	0	0	100
3.			Lab Course Biotechnology I	ULABCBT102	2	0	0	4	0	0	40	60	100
4.		BIOCHEMISTRY /Minor/6	Biochemical Techniques	UBIOCBC101	4	4	0	0	40	60	0	0	100
5.			Lab Course Biochemistry I	ULABCBC102	2	0	0	4	0	0	40	60	100
6.		FOOD TECHNOLOGY /GE/4	Processing of fruits and vegetables	UPROCFT101	3	3	0	0	40	60	0	0	100
7.			Lab Course Food technology I	ULABCFT102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**

1.	**MICROBIOLOGY**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		MICROBIOLOGY / Major/6	General Microbiology & cell structure	UGENEMB101	4	4	0	0	40	60	0	0	100
3.			Lab Course Microbiology I	ULABCMB102	2	0	0	4	0	0	40	60	100
4.		BIOTECHNOLOGY /Minor/6	Cell biology and Biochemistry	UCELLBT101	4	4	0	0	40	60	0	0	100
5.			Lab Course Biotechnology I	ULABCBT102	2	0	0	4	0	0	40	60	100
6.		FOOD TECHNOLOGY /GE/4	Processing of fruits and vegetables	UPROCFT101	3	3	0	0	40	60	0	0	100
7.			Lab Course Food technology I	ULABCFT102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**
1.	**BIOCHEMISTRY**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		BIOCHEMISTRY / Major/6	Biochemical Techniques	UBIOCBC101	4	4	0	0	40	60	0	0	100
3.			Lab Course Biochemistry I	ULABCBC102	2	0	0	4	0	0	40	60	100
4.		BIOTECHNOLOGY /Minor/6	Cell biology and Biochemistry	UCELLBT101	4	4	0	0	40	60	0	0	100
5.			Lab Course Biotechnology I	ULABCBT102	2	0	0	4	0	0	40	60	100
6.		FOOD TECHNOLOGY /GE/4	Processing of fruits and vegetables	UPROCFT101	3	3	0	0	40	60	0	0	100
7.			Lab Course Food technology I	ULABCFT102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**

1.	**FOOD TECHNOLOGY**	HINDI/AECC/4	Hindi Language	UHINDCP101	4	4	0	0	40	60	0	0	100
2.		FOOD TECHNOLOGY / Major/6	Processing of fruits and vegetables	UPROCFT101	4	4	0	0	40	60	0	0	100
3.			Lab Course Food technology I	ULABCFT102	2	0	0	4	0	0	40	60	100
4.		BIOTECHNOLOGY /Minor/6	Cell biology and Biochemistry	UCELLBT101	4	4	0	0	40	60	0	0	100
5.			Lab Course Biotechnology I	ULABCBT102	2	0	0	4	0	0	40	60	100
6.		MICROBIOLOGY /GE/4	General Microbiology & cell structure	UGENEMB101	3	3	0	0	40	60	0	0	100
7.			Lab Course Microbiology I	ULABCMB102	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**

P.K.University
Shivpuri (M.P.)

Faculty of Science

Scheme

For

B. Sc.

(II Semester Course)

W.E.F. - Session 2023 - 2024

P.K.UNIVERSITY SHIVPURI (M.P.)

	B.Sc. 2nd Semester Course Structure – Faculty of Science
	Compulsory courses for B.Sc. 2nd semester students (Level 5)

S. No.	Course	Subjects/Paper type/Total Credits	Paper Title	Paper Code	Credits	: Lecture T: Tutorial P: Practical			Distribution of Theory Marks		Distribution of Practical Marks		Total Marks (CCE+UE)
						L	T	P	CCE	UE	CCE	UE	
1.	PHYSICS	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		PHYSICS/ Major/6	Thermodynamics & Statistical Physics	UTHERPH103	4	4	0	0	40	60	0	0	100
3.			Lab Course Physics II	ULABCPH104	2	0	0	4	0	0	40	60	100
4.		MATHEMATICS/Minor/ 6	Calculus and differential equations	UCALCMA102	6	6	0	0	40	60	0	0	100
5.		CHEMISTRY/GE/4	Analytical Chemistry	UANALCH103	3	3	0	0	40	60	0	0	100
6.			Lab Course Chemistry II	ULABCCH104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**200**	**600**

1.	**MATHEMATICS**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		MATHEMATICS/ Major/6	Calculus and differential equations	UCALCMA102	6	6	0	0	40	60	0	0	100
3.		PHYSICS/Minor/6	Thermodynamics & Statistical Physics	UTHERPH103	4	4	0	0	40	60	0	0	100
4.			Lab Course Physics II	ULABCPH104	2	0	0	4	0	0	40	60	100
5.		CHEMISTRY/GE/4	Analytical Chemistry	UANALCH103	3	3	0	0	40	60	0	0	100
6.			Lab Course Chemistry II	ULABCCH104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**200**	**600**
1.	**COMPUTER SCIENCE**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		COMPUTER SCIENCE / Major/6	Programming Methodologies & Data Structure	UPROGCS103	4	4	0	0	40	60	0	0	100
			Lab Course Computer II	ULABCCS104	2	0	0	4	0	0	40	60	100
3.		PHYSICS/Minor/6	Thermodynamics & Statistical Physics	UTHERPH103	4	4	0	0	40	60	0	0	100
4			Lab Course Physics II	ULABCPH104	2	0	0	4	0	0	40	60	100
5		MATHEMATICS /GE/4	Calculus and differential equations	UCALCMA102	4	4	0	0	40	60	0	0	100
	Total				**20**				**160**	**240**		**200**	**600**

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1.	**Botany**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		BOTANY /Major/6	Basic Botany	UBASIBO103	4	4	0	0	40	60	0	0	100
			Lab Course Botany II	ULABCBO104	2	0	0	4	0	0	40	60	100
3.		ZOOLOGY / Minor/6	Cell biology, Reproductive biology, Developmental biology	UCELLZO103	4	4	0	0	40	60	0	0	100
4			Lab Course Zoology II	ULABCZO104	2	0	0	4	0	0	40	60	100
5		CHEMISTRY/GE/4	Analytical Chemistry	UANALCH103	3	3	0	0	40	60	0	0	100
6			Lab Course Chemistry II	ULABCCH104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**
1.	**ZOOLOGY**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		ZOOLOGY / Major/6	Cell Biology, Reproductive Biology and Development Biology	UCELLZO103	4	4	0	0	40	60	0	0	100
			Lab Course Zoology II	ULABCZO104	2	0	0	4	0	0	40	60	100
3.		BOTANY /Minor/6	Basic Botany	UBASIBO103	4	4	0	0	40	60	0	0	100

4			Lab Course Botany II	ULABCBO104	2	0	0	4	0	0	40	60	100
5		CHEMISTRY/GE/4	Analytical Chemistry	UANALCH103	3	3	0	0	40	60	0	0	100
6			Lab Course Chemistry II	ULABCCH104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**
1.	**CHEMISTRY**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		CHEMISTRY / Major/6	Analytical Chemistry	UANALCH103	4	4	0	0	40	60	0	0	100
			Lab Course Chemistry II	ULABCCH104	2	0	0	4	0	0	40	60	100
3.		BOTANY /Minor/6	Basic Botany	UBASIBO103	4	4	0	0	40	60	0	0	100
4			Lab Course Botany II	ULABCBO104	2	0	0	4	0	0	40	60	100
5		ZOOLOGY /GE/4	Cell Biology, Reproductive Biology and Development Biology	UCELLZO103	3	3	0	0	40	60	0	0	100
6			Lab Course Zoology II	ULABCZO104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**

1.	**BIOTECHNOLOGY**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		BIOTECHNOLOGY / Major/6	Microbiology and Immunology	UMICRBT103	4	4	0	0	40	60	0	0	100
			Lab Course Biotechnology II	ULABCBT104	2	0	0	4	0	0	40	60	100
3.		BIOCHEMISTRY /Minor/6	Chemistry of Biomolecules	UCHEMBC103	4	4	0	0	40	60	0	0	100
4			Lab Course Biochemistry II	ULABCBC104	2	0	0	4	0	0	40	60	100
5		FOOD TECHNOLOGY /GE/4	Fundamentals of Food processing	UFUNDFT103	3	3	0	0	40	60	0	0	100
6			Lab Course Food technology II	ULABCFT104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**
1.	**MICROBIOLOGY**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		MICROBIOLOGY / Major/6	Microbial Techniques	UMICRMB103	4	4	0	0	40	60	0	0	100
			Lab Course Microbiology II	ULABCMB104	2	0	0	4	0	0	40	60	100
3.		BIOTECHNOLOGY /Minor/6	Microbiology and Immunology	UMICRBT103	4	4	0	0	40	60	0	0	100
4			Lab Course Biotechnology II	ULABCBT104	2	0	0	4	0	0	40	60	100
5		FOOD TECHNOLOGY /GE/4	Fundamentals of Food processing	UFUNDFT103	3	3	0	0	40	60	0	0	100
6			Lab Course Food technology II	ULABCFT104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**

1.	**BIOCHEMISTRY**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		BIOCHEMISTRY / Major/6	Chemistry of Biomolecules	UCHEMBC103	4	4	0	0	40	60	0	0	100
			Lab Course Biochemistry II	ULABCBC104	2	0	0	4	0	0	40	60	100
3.		BIOTECHNOLOGY /Minor/6	Microbiology and Immunology	UMICRBT103	4	4	0	0	40	60	0	0	100
4			Lab Course Biotechnology II	ULABCBT104	2	0	0	4	0	0	40	60	100
5		FOOD TECHNOLOGY /GE/4	Fundamentals of Food processing	UFUNDFT103	3	3	0	0	40	60	0	0	100
6			Lab Course Food technology II	ULABCFT104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**
1.	**FOOD TECHNOLOGY**	ENGLISH/AECC/4	English Language	UENGLEN101	4	4	0	0	40	60	0	0	100
2.		FOOD TECHNOLOGY / Major/6	Fundamentals of Food processing	UFUNDFT103	4	4	0	0	40	60	0	0	100
			Lab Course Food technology II	ULABCFT104	2	0	0	4	0	0	40	60	100
3.		BIOTECHNOLOGY /Minor/6	Microbiology and Immunology	UMICRBT103	4	4	0	0	40	60	0	0	100
4			Lab Course Biotechnology II	ULABCBT104	2	0	0	4	0	0	40	60	100
5		MICROBIOLOGY /GE/4	Microbial Techniques	UMICRMB103	3	3	0	0	40	60	0	0	100
6			Lab Course Microbiology II	ULABCMB104	1	0	0	2	0	0	0	100	100
	Total				**20**				**160**	**240**		**300**	**700**

AGENDA OF THE 4th BOARD OF STUDIES OF FACULTY Of SCIENCE.

AGENDA NO. 04

Approval of Scheme and Syllabus of various M.Sc. (1st - 4th Semester) degree course.

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P.K.University
Shivpuri (M.P.)

Scheme

For

M.Sc.

(I, II, III & IV Semester Course)

W.E.F. - Session 2023 - 2024

P.K.UNIVERSITY SHIVPURI (M.P.)

M.Sc. Physics Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MMATHPH101	Mathematical Physics	4	4	0	0	40	60	0	0	100
	MCLASPH102	Classical Mechanics	4	4	0	0	40	60	0	0	100
	MQUANPH103	Quantum Mechanics- I	4	4	0	0	40	60	0	0	100
	MELECPH104	Electronic Devices	4	4	0	0	40	60	0	0	100
	MLABCPH105	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCPH106	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Second	MQUANPH106	Quantum Mechanics -Ii	4	4	0	0	40	60	0	0	100
	MSTATPH107	Statistical Mechanics	4	4	0	0	40	60	0	0	100
	MELECPH108	Electrodynamics And Plasma	4	4	0	0	40	60	0	0	100
	MATOMPH109	Physics	4	4	0	0	40	60	0	0	100
	MLABCPH111	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCPH112	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Third	MCOMPH201	Computer Architecture,	4	4	0	0	40	60	0	0	100
	MENVIPH202	Networking & Assembly	4	4	0	0	40	60	0	0	100
	MCOMMPH203	Language Programming	4	4	0	0	40	60	0	0	100
	MDIGIPH204	Environmental Physics	4	4	0	0	40	60	0	0	100
	MLABCPH205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCPH206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Fourth	MCONDPH206	Condensed Matter Physics	4	4	0	0	40	60	0	0	100
	MNUCLPH207	Nuclear And Particle Physics	4	4	0	0	40	60	0	0	100
	MLABCPH209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSPH210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	**20**				**80**	**120**	**20**	**280**	**500**
		Total marks of all semester	**80**				**560**	**960**	**140**	**460**	**2000**

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

M.Sc. Chemistry Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MINORCH101	Inorganic Chemistry I	4	4	0	0	40	60	0	0	100
	MORGACH102	Organic Chemistry I	4	4	0	0	40	60	0	0	100
	MPHYSCH103	Physical Chemistry I	4	4	0	0	40	60	0	0	100
	MGROUCH104	Group Theory & Spectroscopy I	4	4	0	0	40	60	0	0	100
	MMATHCH105 MBIOLCH106	a) Mathematics for Chemists* b) Biology for Chemists**	4	4	0	0	40	60	0	0	100
	MLABCCH107	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCCH108	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	24				200	300	40	60	600
Second	MINORCH109	Inorganic Chemistry II	4	4	0	0	40	60	0	0	100
	MORGACH110	Organic Chemistry II	4	4	0	0	40	60	0	0	100
	MPHYSCH111	Physical Chemistry II	4	4	0	0	40	60	0	0	100
	MSPECCH112	Spectroscopy II	4	4	0	0	40	60	0	0	100
	MCOMPCH113	Computers for Chemists	4	4	0	0	40	60	0	0	100
	MLABCCH114	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCCH115	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	24				200	300	40	60	600
Third	MAPPLCH201	Applications of Spectroscopy (Inorganic- Chemistry)	4	4	0	0	40	60	0	0	100
	MPHOTCH202	Photochemistry	4	4	0	0	40	60	0	0	100
	MBIOCCH203	Biochemistry	4	4	0	0	40	60	0	0	100
	MSOLICH204	Solid State Chemistry	4	4	0	0	40	60	0	0	100
	MLABCCH205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCCH206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Fourth	MAPPLCH207	Applications of Spectroscopy (Organic- Chemistry)	4	4	0	0	40	60	0	0	100
	MENVICH208	Environmental Chemistry	4	4	0	0	40	60	0	0	100
	MLABCCH209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSCH210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	20				80	120	20	280	500
		Total marks of all semester	84				640	960	140	460	2200

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

P.K University
Shivpuri (M.P.)

M.Sc. Mathematics Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MREALMA101	Real analysis	4	4	0	0	40	60	0	0	100
	MTOPOMA102	Topology	4	4	0	0	40	60	0	0	100
	MCOMPMA103	Complex analysis	4	4	0	0	40	60	0	0	100
	MALGEMA104	Algebra	4	4	0	0	40	60	0	0	100
	MMEASMA105	Measure theory and Integration	4	4	0	0	40	60	0	0	100
		TOTAL	20				200	300	0	0	500
Second	MDIFFMA106	Differential equation (ordinary and partial)	4	4	0	0	40	60	0	0	100
	MNUMEMA107	Numerical method	4	4	0	0	40	60	0	0	100
	MNUMBMA108	Number theory	4	4	0	0	40	60	0	0	100
	MLINEMA109	Linear algebra	4	4	0	0	40	60	0	0	100
	MCOMMMA110	Commutative algebra	4	4	0	0	40	60	0	0	100
		TOTAL	20				200	300	0	0	500
Third	MCOMPMA201	Computer programming in C	4	4	0	0	40	60	0	0	100
	MSTATMA202	Statistics	4	4	0	0	40	60	0	0	100
	MFUNCMA203	Functional analysis	4	4	0	0	40	60	0	0	100
	MINTEMA204	Integral transforms and boundary value problems	4	4	0	0	40	60	0	0	100
	MCODEMA205	Coding theory	4	4	0	0	40	60	0	0	100
		TOTAL	20				200	300	0	0	500
Fourth	MOPERMA206	Operational research	4	4	0	0	40	60	0	0	100
	MCRYPMA207	Cryptography	4	4	0	0	40	60	0	0	100
	MDESIMA208	Design of experiments	2	0	0	4	0	0	20	30	50
	MMECHMA209	Mechanics	10	0	0		0	0	0	250	250
	MMODEMA210	Modelling and simulation	4	4	0	0	40	60	0	0	100
		TOTAL	20				200	300	0	0	500
		Total marks of all semester	80				800	1200	140	460	2000

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

P.K.University
Shivpuri (M.P.)

M.Sc. Botany Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MBIOLBO101	Biology & Diversity of Viruses, Bacteria and fungi	4	4	0	0	40	60	0	0	100
	MBIOLBO102	Biology & Diversity of Algae, Bryophytes and Pteridophytes	4	4	0	0	40	60	0	0	100
	MBIOLBO103	Biology & Diversity of Gymnosperms	4	4	0	0	40	60	0	0	100
	MPLANBO104	Plant Ecology	4	4	0	0	40	60	0	0	100
	MLABCBO105	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCBO106	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Second	MPLANBO107	Plant Development & Reproduction	4	4	0	0	40	60	0	0	100
	MMORPBO108	Morphology & Taxonomy of Angiosperms	4	4	0	0	40	60	0	0	100
	MUTILBO109	Utilization & Conservation of Plant Resources	4	4	0	0	40	60	0	0	100
	MCELLBO110	Cell Biology of Plants	4	4	0	0	40	60	0	0	100
	MLABCBO111	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCBO112	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Third	MPLANBO201	Plant Physiology	4	4	0	0	40	60	0	0	100
	MPLANBO202	Plant Biochemistry & Metabolism	4	4	0	0	40	60	0	0	100
	MCYTOBO203	Cytogenetics & Genetics	4	4	0	0	40	60	0	0	100
	MMOLEBO204	Molecular Biology of Plants	4	4	0	0	40	60	0	0	100
	MLABCBO205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCBO206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Fourth	MPLANBO207	Plant Cell, Tissue & Organ Culture	4	4	0	0	40	60	0	0	100
	MBIOTBO208	Biotechnology & Genetic Engineering	4	4	0	0	40	60	0	0	100
	MLABCBO209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSBO210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	20				80	120	20	280	500
		Total marks of all semester	80				560	960	140	460	2000

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

RK University
R.K. University
Shivpur (M.P.)

M.Sc. Zoology Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MBIOSZO101	Biosystematics, Taxonomy and Evolution	4	4	0	0	40	60	0	0	100
	MSTRUZO102	Structure and function of Invertebrates	4	4	0	0	40	60	0	0	100
	MQUANZO103	Quantitative biology, Biodiversity and Wild Life	4	4	0	0	40	60	0	0	100
	MBIOMZO104	Biomolecules and Structural Biology	4	4	0	0	40	60	0	0	100
	MLABCZO105	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCZO106	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Second	MGENEZO107	General and Comparative animal physiology and Endocrinology	4	4	0	0	40	60	0	0	100
	MPOPUSZO108	Population Ecology and Environmental physiology	4	4	0	0	40	60	0	0	100
	MTOOLZO109	Tools and Techniques for Biology	4	4	0	0	40	60	0	0	100
	MMOLEZO110	Molecular cell biology and Genetics	4	4	0	0	40	60	0	0	100
	MLABCZO111	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCZO112	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Third	MCOMPZO201	Comparative anatomy of Vertebrates	4	4	0	0	40	60	0	0	100
	MGAMEZO202	Gamete Biology, Genes, development & differentiation	4	4	0	0	40	60	0	0	100
	MCELLZO203	Cell Biology	4	4	0	0	40	60	0	0	100
	MCELLZO204	Cell structure and Molecular Organization	4	4	0	0	40	60	0	0	100
	MLABCZO205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCZO206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Fourth	MANIMZO207	Animal Behaviors and Neurophysiology	4	4	0	0	40	60	0	0	100
	MECOTZO208	Ecotoxicology	4	4	0	0	40	60	0	0	100
	MLABCZO209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSZO210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	**20**				**80**	**120**	**20**	**280**	**500**
		Total marks of all semester	**80**				**560**	**960**	**140**	**460**	**2000**

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

P.K.University
Shivpuri (M.P.)

M.Sc. Biochemistry Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MFUNDBC101	Fundamentals of Cell Biology	4	4	0	0	40	60	0	0	100
	MBIOMBC102	Biomolecules	4	4	0	0	40	60	0	0	100
	MMICRBC103	Microbial Biochemistry	4	4	0	0	40	60	0	0	100
	MBIOIBC104	Bioinstrumentation	4	4	0	0	40	60	0	0	100
	MLABCBC105	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCBC106	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Second	MFUNDBC107	Fundamentals of Molecular Biology	4	4	0	0	40	60	0	0	100
	MBIOEBC108	Bioenergetics and Metabolism	4	4	0	0	40	60	0	0	100
	MIMMUBC109	Immunochemistry	4	4	0	0	40	60	0	0	100
	MENZYBC110	Enzymology	4	4	0	0	40	60	0	0	100
	MLABCBC111	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCBC112	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Third	MGENEBC201	Genetic Engineering	4	4	0	0	40	60	0	0	100
	MPLANBC202	Plant Biotechnology	4	4	0	0	40	60	0	0	100
	MCLINBC203	Clinical Biochemistry & Nutrition	4	4	0	0	40	60	0	0	100
	MPHYSBC204	Physiology & Endocrinology	4	4	0	0	40	60	0	0	100
	MLABCBC205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCBC206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
Fourth	MCELLBC207	Cell biology and Biochemistry	4	4	0	0	40	60	0	0	100
	MFRONLBC208	Frontiers in Biochemistry & Biostatistics	4	4	0	0	40	60	0	0	100
	MLABCBC209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSBC210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	**20**				**80**	**120**	**20**	**280**	**500**
		Total marks of all semester	**80**				**560**	**960**	**140**	**460**	**2000**

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

M.Sc. Microbiology Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MBASIMB101	Basics in Microbiology and General Bacteriology	4	4	0	0	40	60	0	0	100
	MVIROMB102	Virology and Mycology	4	4	0	0	40	60	0	0	100
	MCELLMB103	Cell biology and Biochemistry	4	4	0	0	40	60	0	0	100
	MBIOIMB104	Bioinstrumentation	4	4	0	0	40	60	0	0	100
	MLABCMB105	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCMB106	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Second	MMICRMB107	Microbial genetics and Molecular Biology	4	4	0	0	40	60	0	0	100
	MIMMUMB108	Immunology	4	4	0	0	40	60	0	0	100
	MBIOSMB110	Microbial Physiology and metabolism	4	4	0	0	40	60	0	0	100
	MBIOSMB110	Biostatics, Computer application and Bioinformatics	4	4	0	0	40	60	0	0	100
	MLABCMB111	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCMB112	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Third	MMEDIMB201	Medical and Pharmaceutical Microbiology	4	4	0	0	40	60	0	0	100
	MFERMMB202	Fermentation and Microbial Technology	4	4	0	0	40	60	0	0	100
	MRECOMB203	Recombinant DNA Technology	4	4	0	0	40	60	0	0	100
	MENVIMB204	Environmental Microbiology	4	4	0	0	40	60	0	0	100
	MLABCMB205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCMB206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Fourth	MFOODMB207	Food Microbiology	4	4	0	0	40	60	0	0	100
	MMICRMB208	Microbial Biochemistry	4	4	0	0	40	60	0	0	100
	MLABCMB209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSBC210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	20				80	120	20	280	500
		Total marks of all semester	80				560	960	140	460	2000

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

M.Sc. Biotechnology Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
First	MMICRBT101	Microbiology	4	4	0	0	40	60	0	0	100
	MBIOCBT102	Biochemistry & Biophysics	4	4	0	0	40	60	0	0	100
	MCELLBT103	Cell biology	4	4	0	0	40	60	0	0	100
	MGENEBT104	Genetics & Molecular biology	4	4	0	0	40	60	0	0	100
	MLABCBI105	Lab Course I	2	0	0	4	0	0	20	30	50
	MLABCBI106	Lab Course II	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Second	MENZYBT107	Enzymology & Enzyme Technology	4	4	0	0	40	60	0	0	100
	MGENEBT108	Genetic Engineering	4	4	0	0	40	60	0	0	100
	MIMMUBT109	Immunology	4	4	0	0	40	60	0	0	100
	MPLANBT110	Plant Biotechnology	4	4	0	0	40	60	0	0	100
	MLABCBI111	Lab Course III	2	0	0	4	0	0	20	30	50
	MLABCBI112	Lab Course IV	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Third	MANIMBT201	Animal Cell Culture	4	4	0	0	40	60	0	0	100
	MENVIBT202	Environmental Biotechnology	4	4	0	0	40	60	0	0	100
	MTOOLBT203	Tools & Techniques in Biotechnology	4	4	0	0	40	60	0	0	100
	MSOCIBT204	Social, Ethical, Legal and Management issue	4	4	0	0	40	60	0	0	100
	MLABCBI205	Lab Course V	2	0	0	4	0	0	20	30	50
	MLABCBI206	Lab Course VI	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Fourth	MBIOPBT207	Bioprocess Engineering & Technology	4	4	0	0	40	60	0	0	100
	MBIOIBT208	Bioinformatics & Biostatistics	4	4	0	0	40	60	0	0	100
	MLABCBT209	Lab Course VII	2	0	0	4	0	0	20	30	50
	MDISSBT210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	20				80	120	20	280	500
		Total marks of all semester	80				560	960	140	460	2000

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

P.K.University
Shivpuri (M.P.)

M.Sc. Food Technology Examination Scheme (2023-24)

emester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	T-UE	P-CCE	P-UE	Marks
	MFOODFT101	Food Biochemistry & Nutrition	4	4	0	0	40	60	0	0	100
	MFOODFT102	Food Chemistry	4	4	0	0	40	60	0	0	100
	MFOODFT103	Food Microbiology	4	4	0	0	40	60	0	0	100
First	MFOODFT104	Food Processing & Preservation	4	4	0	0	40	60	0	0	100
	MLABCFT105	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCFT106	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
	MFRUIFT107	Fruit and Vegetable Technology	4	4	0	0	40	60	0	0	100
((	MFOODFT108	Food Engineering	4	4	0	0	40	60	0	0	100
	MFOODFT109	Food Packaging-I	4	4	0	0	40	60	0	0	100
econd	MFOODFT110	Food Quality Control, Laws & Management	4	4	0	0	40	60	0	0	100
	MLABCFT111	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCFT112	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
	MPROCFT201	Processing of Cereals, Pulses, Oil Seed & Sugar crops	4	4	0	0	40	60	0	0	100
	MPROCFT202	Processing of milk and Milk Products	4	4	0	0	40	60	0	0	100
	MPROCFT203	Processing of Meat, Poultry & Egg Products	4	4	0	0	40	60	0	0	100
Third	MENTRFT204	Entrepreneurship in Food Processing, Food Standards &Food laws	4	4	0	0	40	60	0	0	100
((	MLABCFT205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCFT206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	**20**				**160**	**240**	**40**	**60**	**500**
	MADVAFT207	Advances in Food Technology	4	4	0	0	40	60	0	0	100
	MFOODFT208	Food Processing, Chemistry and Microbiology	4	4	0	0	40	60	0	0	100
Fourth	MLABCFT209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSFT210	Dissertation	10	0	0	10	0	0	0	250	250
		TOTAL	**20**				**80**	**120**	**20**	**280**	**500**
		Total marks of all semester	**80**				**560**	**960**	**140**	**460**	**2000**

L – Lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

P.K.University
Shivpuri (M.P.)

M.Sc. Computer Science Examination Scheme (2023-24)

Semester	Course Code	Title of the Paper	Credit	L	T	P	T-CCE	P-UE	P-CCE	P-UE	Marks
First	MOBJECS101	Object oriented programming using C	4	4	0	0	40	60	0	0	100
	MADVACS102	Advanced operating system	4	4	0	0	40	60	0	0	100
	MEMBECS103	Embedded system	4	4	0	0	40	60	0	0	100
	MADVACS104	Advanced DBMS	4	4	0	0	40	60	0	0	100
	MLABCCS105	Lab course I	2	0	0	4	0	0	20	30	50
	MLABCCS106	Lab course II	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Second	MDATACS107	Data structure algorithms & Analysis	4	4	0	0	40	60	0	0	100
	MSOFTCS108	Software Engineering & Testing	4	4	0	0	40	60	0	0	100
	MADVACS109	Advanced Computer Networks	4	4	0	0	40	60	0	0	100
	MNUMECS110	Numerical Techniques & Discrete Mathematics Structure	4	4	0	0	40	60	0	0	100
	MLABCCS111	Lab course III	2	0	0	4	0	0	20	30	50
	MLABCCS112	Lab course IV	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Third	MPROGCS201	Programming in Java	4	4	0	0	40	60	0	0	100
	MOBJECS202	Object Oriented Analysis and Design using UML	4	4	0	0	40	60	0	0	100
	MCOMPCS203	Computer Graphics	4	4	0	0	40	60	0	0	100
	MDIGICS204	Digital image processing	4	4	0	0	40	60	0	0	100
	MLABCCS205	Lab course V	2	0	0	4	0	0	20	30	50
	MLABCCS206	Lab course VI	2	0	0	4	0	0	20	30	50
		TOTAL	20				160	240	40	60	500
Fourth	MARTICS207	Artificial Intelligence	4	4	0	0	40	60	0	0	100
	MINTECS208	Internet Computing Using Asp.Net	4	4	0	0	40	60	0	0	100
	MLABCCS209	Lab course VII	2	0	0	4	0	0	20	30	50
	MDISSCS210	Dissertation	10	0	0		0	0	0	250	250
		TOTAL	20				80	120	20	280	500
		Total marks of all semester	80				560	960	140	460	2000

L – lecture T- Theory P- Practical CCE- Continuous comprehensive Exam UE- University Exam

AGENDA OF THE 4th BOARD OF STUDIES OF FACULTY Of SCIENCE.

AGENDA NO. 05

Approval of Scheme and Syllabus of various B.Sc. 3rd Year degree course as per 52(B) NEP.

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P.K.University
Shivpuri (M.P.)

Faculty of Science

Scheme

For

B. Sc.

(III Year COURSE)

W.E.F. Session 2023 - 2024

P.K.UNIVERSITY SHIVPURI (M.P.)

B.Sc. 3rd Year Course Structure – Faculty of Science												
Compulsory courses for B.Sc. 3rd Year students (Mathematics Major) (Level 7)												
S. No.	Paper Code	Paper Title	Credits	L: Lecture T: Tutorial P: Practical			Distribution of Theory Marks		Distribution of Practical Marks		Total Marks (CCE+UE)	Subjects/Paper type/Total Credits
				L	T	P	CCE	UE	CCE	UE		
1.	UENGLBC301	English Language and Communication skill	2	1	0	0	0	50	0	0	50	English/AECC1/2
2.	UPERSBC302	Personality Development and Character Building	2	1	0	0	0	50	0	0	50	Personality Development /AECC2/2
3.	UDIGIBC303	Digital Awareness-Cyber Security	2	1	0	0	0	50	0	0	50	Digital Awareness/AECC3/2
4.	UBHASBC304	Bhasha aur Sanskriti	2	1	0	0	0	50	0	0	50	Hindi/ AECC4/2
5.	UDESKBC305	Desktop publishing-Theory	3	1 1/2	0	0	30	70	0	0	100	/SEC/3
6.	UDESKBC306	Desktop publishing -practical	1	0	0	1	0	0	0	100	100	/SEC/1
7.	UPROJSP307	Undergraduate 3rd Year project in Major (Physics/Chemistry, etc.)	4	0	0	0	0	0	0	0	100	
				One contract hour/week			(a) Undergraduate 1st Year project in Major (Physics/Mathematics/Zoology, etc.) Subjects: 75 Marks (b) Evaluation of Report: 25 Marks					
Total											500	16
Subject combination for Mathematics Major (B.Sc. 3rd year: Level 5) (Each paper carries 100 marks)												
1.	UNUMEMA308	Numerical Methods and Scientific Computational (Theory)	6	3	0	0	30	70	0	0	100	Mathematics/Major/12
2.	UELEMMA309	Elements of Discrete Mathematics(Theory)	6	3	0	0	30	70	0	0	100	
3.	UQUANPH310	Quantum Mechanics, Solid State Physics and Devices(Theory)	4	2	0	0	30	70	0	0	100	Physics/Minor/6
4.	UQUANPH311	Quantum Mechanics, Solid State Physics and Devices Lab(Practical)	2	0	0	2	0	0	0	100	100	
5.	UPHARCH312	Pharmaceutical and Medicinal Chemistry	4	3	0	0	30	70	0	0	100	Chemistry/Minor/6
6.	UPHARCH313	Pharmaceutical and Medicinal Chemistry Practical	2	0	0	2	0	0	0	100	100	
Total											600	24

B.Sc. 3rd Year Course Structure – Faculty of Science												
Compulsory courses for B.Sc. 3rd Year students (Zoology Major) (Level 7)												
S. No.	Paper Code	Paper Title	Credits	L: Lecture T: Tutorial P: Practical			Distribution of Theory Marks		Distribution of Practical Marks		Total Marks (CCE+UE)	Subjects/Paper type/Total Credits
				L	T	P	CCE	UE	CCE	UE		
1.	UENGLBC301	English Language and Communication skill	2	1	0	0	0	50	0	0	50	English/AECC1/2
2.	UPERSBC302	Personality Development and Character Building	2	1	0	0	0	50	0	0	50	Personality Development /AECC2/2
3.	UDIGIBC303	Digital Awareness-Cyber Security	2	1	0	0	0	50	0	0	50	Digital Awareness /AECC3/2
4.	UBHASBC304	Bhasha aur Sanskriti	2	1	0	0	0	50	0	0	50	Hindi/ AECC4/2
5.	UDESKBC305	Desktop publishing-Theory	3	1 1/2	0	0	30	70	0	0	100	Desktop Publishing/SEC/3
6.	UDESKBC306	Desktop publishing -practical	1	0	0	1	0	0	0	100	100	Desktop Publishing/SEC/1
7.	UPROJSP307	Undergraduate 3rd Year project in Major Zoology/Chemistry, etc.)	4	0	0	0	0	0	0	0	100	
				One contract hour/week			(a) Undergraduate 1st Year project in Major (Physics/Mathematics/Zoology, etc.) Subjects: 75 Marks (b) Evaluation of Report: 25 Marks					
Total											500	16
Subject combination for Zoology Major (B.Sc. 3rd year: Level 5) (Each paper carries 100 marks)												
1.	UINSEZO308	Insect Taxanomy and Applied Entomology(Paper-I)	4	2	0	0	30	70	0	0	100	Zoology/Major/12
2.	UAPPLZO309	Applied Entomology(Paper-I) Practical	2	0	0	2	0	0	0	100	100	
3.	UECOLZO310	Ecology, Biodiversity and Evolution (Paper-II)	4	2	0	0	30	70	0	0	100	
4.	UENVIZO311	Environmental Biology (Paper-II) Practical	2	0	0	2	0	0	0	100	100	
5.	UETHNBO314	Ethno Botany	4	2	0	0	30	70	0	0	100	Botany/Minor/6
6.	UETHNBO315	Ethno Botany Practical	2	0	0	2	0	0	0	100	100	
7.	UPHARCH312	Pharmaceutical and Medicinal Chemistry	4	2	0	0	30	70	0	0	100	Chemistry/Minor/6
8.	UPHARCH313	Pharmaceutical and Medicinal Chemistry Practical	2	0	0	2	0	0	0	100	100	
Total											800	24

B.Sc. 3rd Year Course Structure – Faculty of Science												
Compulsory courses for B.Sc. 3rd Year students (Computer Science Major) (Level 7)												
S. No.	**Paper Code**	**Paper Title**	**Credits**	**L: Lecture T: Tutorial P: Practical**			**Distribution of Theory Marks**		**Distribution of Practical Marks**		**Total Marks (CCE+UE)**	**Subjects/Paper type/Total Credits**
				L	**T**	**P**	**CCE**	**UE**	**CCE**	**UE**		
1.	UENGLBC301	English Language and Communication skill	2	1	0	0	0	50	0	0	50	English/AECC1/2
2.	UPERSBC302	Personality Development and Character Building	2	1	0	0	0	50	0	0	50	Environmental /AECC2/2
3.	UDIGIBC303	Digital Awareness-Cyber Security	2	1	0	0	0	50	0	0	50	Yoga /AECC3/2
4.	UBHASBC304	Bhasha aur Sanskriti	2	1	0	0	0	50	0	0	50	Hindi/ AECC4/2
5.	UDESKBC305	Desktop publishing-Theory	3	1½	0	0	30	70	0	0	100	Desktop Publishing/SEC/3
6.	UDESKBC306	Desktop publishing -practical	1	0	0	1	0	0	0	100	100	Desktop Publishing/SEC/1
7.	UPROJSP307	Undergraduate 1st Year project in Major (Physics/Chemistry, etc.)	4	0	0	0	0	0	0	0	100	
				One contract hour/week			(a) Undergraduate 1st Year project in Major (Physics/Mathematics/Zoology, etc.) Subjects: 75 Marks (b) Evaluation of Report: 25 Marks					
Total											**500**	**16**
		Subject combination for Computer Science Major (B.Sc. 3rd year: Level 7) (Each paper carries 100 marks)										
1.	UOPERCS308	Operating System (Theory)	4	2	0	0	30	70	0	0	100	Computer science/ Major/12
2.	UOPERCS309	Operating system Lab.	2	0	0	2	0	0	0	100	100	
3.	UPROGCS310	Programming with Python(Theory)	4	2	0	0	30	70	0	0	100	
4.	UPROGCS311	Programming with Python Lab.	2	0	0	2	0	0	0	100	100	
5.	UPHPMCS312	PHP & MySQL (Theory)	4	2	0	0	30	70	0	0	100	Computer science/ Minor/6
6.	UPHPMCS313	PHP & MySQL Lab.	2	0	0	2	0	0	0	100	100	
7.	UCLOUCS314	Cloud Computing (Theory)	4	2	0	0	30	70	0	0	100	Computer science/ Minor/6
8.	UCLOUCS315	Cloud Computing Lab.	2	0	0	2	00		0	100	100	
Total											**800**	**24**

AGENDA OF THE 4(th) BOARD OF STUDIES OF FACULTY Of SCIENCE.

AGENDA NO. 06

Approval of rules in addition to ordinance 52 (A)
(Under Graduate Courses).

RULES IN ADDITION TO 52(A)
AND COMMON TO ALL COURSES

FACULTY OF SCIENCE
P.K. UNIVERSITY,
SHIVPURI(M.P.)
W.E.F.- SESSION 2023-2024

ADDRESS: VILL: THANRA, TEHSIL: KARERA, NH-27, DIST: SHIVPURI, M.P. 473665,
MOB: 7241115088, Email:registrar.pkuniversity@gmail.com

Agenda No – 6

Rules in addition to provision of ordinance 52(A) with regard to all the B.Sc. courses of faculty of Science

These rules are Complementary to ordinance 52(A) of Faculty of Science and are rules addition to Provision of Ordinance 52(A) with regard to all the B.Sc. Courses of Faculty of Science as follows.

1. **Eligibility:**

Candidates seeking admission to the first year of Bachelor of Science Course shall be required to have passed the higher Secondary Examination (10+2) with Maths and science as main Subjects of M.P. Higher secondary Board or an examination recognized equivalent there to.

2. **Admission Procedure :**

Admission under these courses will be made as follow:

a). The University will issue admission notification in news -papers, on the University's website, notice board of the University and in other publicity media before the start of every cycle,

b). List of candidates provisionally selected for admission / shortlisted based on merit will be displayed on the notice board of the University / University's website or the students will be informed directly of their admission after the last date of application.

c) The candidates whose results of the qualifying exam are awaited can also apply who will be admitted provisionally. Such candidates, however, must produce the previous year mark sheet School/ College certificates, as a proof for required eligibility criteria before the due date failing which, the provisional admission cannot be granted. The candidate so admitted shall have to be present mark sheet of the qualifying examination within a month of the due date of admission, failing which the, provisional admission shall be cancelled.

d) If a candidate admitted provisionally under (c) above could not obtain the marks to full fill the requirements & eligibility criteria of the admission the provisional admission granted to him will be cancelled.

e) The application form may be rejected due to any of the following reasons:

- If the candidate does not full fill the eligibility criteria.
- If the prescribed fees is not submitted.
- If the application form is not signed by the candidate and his/her parent guardian, wherever required.
- If Supporting documents for admission are not Submitted.

f) Enrolment / Registration number will be assigned to the student by the University after verification & submission of all necessary documents/fees.

g) Admission rules as framed by the University shall be applicable for all admissions from time to time.

3. **Fee Structure:**
The fees for each course shall be decided by Board of Management of University. The Number of seats in each course will be as per Statute.

4. **Duration of courses:**
   a. Degrees of Bachelor of Science shall be 3 year (Six semester)duration & shall of part I, II and III(final) . Maximum duration of course is 6 years.

   b. A candidate has to complete the entire course of Under Graduate Degree will be maximum period of six years from the session of first admission.

5. **Examination:**
Promotion to higher year of credit and grades, as per ordinance No. 51.

Note: In compliance of Ordinance 14 A, The minimum marks mentioned in the syllabus of all the subject of the 1st year(Each semester) of graduation should be read as 35 instead of 33.

6. Every Candidate for the B.Sc. Examination shall be examined as per permission of Ordinance 51A.

7. The Scope of Studies of part 1st, 2nd, 3rd , 4th,5th, and 6th semester examination shall be as prescribed by the university / Central Board of studies in the syllabus from time to time and printed in the prospectus for the examination concerned.

8. Notwithstanding anything stated in this Ordinance, for any unforeseen issues arising, and not covered by this Ordinance, or in the event of differences of interpretation, the Vice-Chancellor may take a decision after obtaining, if necessary, the opinion advice of a Committee consisting of any or all the Directors of the Schools. The decision of the Vice-Chancellor shall be final.

9. **Attendance:**

   a. Minimum attendance required for become eligible to appear in yearly examination for each theory and practical paper shall be 75%.
   b. In case a student is short of attendance due to illness, participation in university, State/ National level sport extra -Curricular activities etc. the following condition shall apply.

c. Shortage of up to 10 % attendance may be condoned by the Head of the department, on the specific recommendation of the staff council

d. Shortage of up to Maximum of 25% may be condoned by the vice chancellor on the specific recommended of the head of the Department.

e. Name of such student who remains absent for consecutive 30 days without prior permission / citing valid reasons, shall be struck of the attendance register and his / her admission shall stand cancelled Readmission will be done only after remitting the prescribed fee however the department may not enterain candidate's request for readmission if he/she fails to justify the reason for his/her absence, or on valid disciplinary ground .

10. The Reservation to SC/ST/Other category candidates shall be applicable as per the norms of the State Government of Madhya Pradesh.

Faculty of Science

Scheme

For

Ph.D.
(Part Time)

W.E.F. - Session 2023 - 2024

P.K. UNIVERSITY SHIVPURI (M.P.)

Faculty of Science

Syllabus for Ph.D. Course Work

Paper – I (Research Methodology)

1. **Scientific Process:** Meaning and Definition, a brief history of scientific process.

2. **Introduction of Research Methodology:** Meaning of research, objectives of research, types of research, significance of research, problems encountered by researchers in India.

3. **Research Problem:** Definition, necessity and techniques of defining research problem, formulation of research problem, Objectives of research problem.

4. **Research Design:** Meaning, need and features of good research design, Types of Research Designs, Basic Principles of Experimental Designs, Design of experiments, Synopsis design for research topic.

5. **Sampling Designs:** Census and Sample surveys, Different types of sample designs, Characteristics of good sample design, Techniques of selecting a random sample.

6. **Editing, Data Collection and Validation:** Primary and secondary data, Methods of collecting primary and secondary data, Importance and methods of editing and data validation.

7. **Hypothesis:** Definition, testing of hypothesis, procedures of hypothesis testing, flow diagram for hypothesis testing, Parametric and non-parametric tests for testing of hypothesis, Limitations of tests of hypothesis.

8. **Paper/Thesis Writing and Report Generation:** Basic concepts of paper their writing and report generation, review of literature, Concepts of Bibliography and References, significance of report writing, steps of report writing, Types of Research reports, Methods of presentation of report.

9. **Computer Applications:** Fundamentals of computers - definition, types of computer, RAM, ROM, CPU, I/O devices, Number system - binary, octal and hexadecimal, base conversion, Logic gates - AND, OR, NOT, Date Structure - array, stack (push, pop), queue (insert, delete), linked list - singly, doubly, Operating system - definition, types of OS, Use of software - MS Office - Power Point, WORD and EXCEL and ACCESS.

10. **Field and Computer hards:** viruses, misuse of internet, hacking, Field hazards.

11. **Instrumentation:** Description and principles of **(i)** Electrophoresis **(ii)** PCR Machine **(iii)** Laminar Flow **(iv)** Ultracentrifuge **(v)** Autoclave and **(vi)** Light and electron microscopy, Chromatography and HPLC, Handling of instruments and precautions.

12. Safety Measures:

(i) Lab Safety Measures: Introduction, Code of conduct - while entering in the lab, while working with the chemicals, while disposal of chemicals, Storage and disposal of chemical wastes - aqueous wastes, organic wastes and radioactive wastes, Human contribution to reduce hazardous wastes.

(ii) Field Safety Measures: Food security during field trip/expedition, safety measures during field trip/expedition - self- care, avoid in fields, care from wild animals, hazard warnings, Safety measures during visit to library and villages, first aid in the fields.

Syllabus for Ph.D. Course Work Paper – II (Physics)

1. **Mathematical Methods**

   Complex variables, Cauchy – Riemann condition, analytic functions, Cauchy's theorem. Legendre Bessel Hermite differential egs., Fourierintegral and Fourier ransforms.

2. **Classical Mechanics**

   D' Alembert's principle and Largrange's equations, Hamilton's principle,the principal of least action, Canonical transformations.

3. **Non Relativistic Quantum Mechanics**

   Schordinger equation and its applications, Theory of angular momentum,Quantum theory of Scattering, S-matrix Theory.

4. **Statistical Physics**

   Foundation of Statistical mechanics, Elements of ensemble theory – a system in Microcanoncial, Canonical and Grand Canonical ensembles, Partition functions applications of ensemble theory Maxwell - Boltzman,Bose-Einstein, Fermi-Dirac distributions.

5. **Atomic and Molecular Physics**

   Electronic spectra, Radiative transitions, Applications of Laser in spectroscopy, Basic idea of two photon processes and frequency up conversion.

6. **Nuclear and particle Physics**

   Nuclear forces, Nuclear Models, Beta decay Fermi theory, parity violation,Symmetry and conservation laws, Special Unitary Symmetries and Quark model.

7. **Electrodynamics and Plasma Physics**

   Maxwell's equations in four dimensions, Gauge transformations, Lorentz transformations, Elementary concept of Plasma and Magneto- Hydrodynamics.

8. **Relativistic Quantum Mechanics**

   Relativistic Quantum Mechanics, Basics concepts of Quantum FieldTheory.

9. **Electronics**

   Linear integrated circuits, Operational amplifier and its applications.

10. **Condensed Matter Physics**

    Debye theory of solids, Block theorem, K.P. Model distinction betweenMetal, insulator and semiconductor, Superconductivity, BCS theory of Superconductor.

Syllabus for Ph.D Course Work in Chemistry

(Paper II : Chemistry)

1. **GREEN CHEMISTRY**

   Basic Principles of Green Chemistry. Designing a Green Synthesis: Choice of starting materials, choice of reagents, choice of catalysts, choice of solvents. Green reagents, Green catalysts, Phase transfer catalysis for greens synthesis. Organic synthesis in solid phase. Versatile ionic liquids as green solvents. Some examples of synthesis involving basis principles of green chemistry of industrial importance.

2. **NANOCHEMISTRY**

   Introduction, classification of nanoparticles, synthesis, characterization, properties and application of nanomaterials.

3. **ADVANCED MATERIALS CHEMISTRY**

   Structure of solids, symmetry concepts, crystal structure. Preparative methods and characterization of inorganic solids. Crystal defects and non-stoichiometry. Interpretation of phase diagrams, phase transitions. Basics of magnetic, thermal, electrical, optical and mechanical properties of solids.

4. **APPLICATION OF SILICATE-BASED INORGANICSOLIDS**

   Silicates, Clays, Nano clays, Zeolite and Zeolitic Materials: Importance of Zeolite and Zeolitic Materials: As adsorbents and molecular sieves, Asheterogeneous reusable catalysts in petrochemical industry, As filler in fire retardant materials, In nuclear industry, In agricultural industries

5. **SPECTROSCOPY: APPLICATIONS FOR ORGANICCHEMISTS**

   N M R Techniques in the identification and characterization of organic compounds,inorganic complexes and Polymers.

6. **INTRODUCTORY QUANTUM CHEMISTRY**

   Postulates of Quantum Mechanics. Operators, Chemical bonding. Born-Oppenheimer approximation. Variational treatment of hydrogen molecule ion. Valence bond and MO (LCAO) treatment of hydrogen molecule.

7. **ADVANCED CHEMICAL KINETICS**

   Experimental methods for fast reactions. Temperature jump, pressure jump stopped flow and flash photolysis pulse technique as applied to reaction rates of short lived species. Shock tube kinetics. NMR studies in rate processes. Enzyme kinetics of complicated

systems, theory of diffusion controlledreactions.

8. **ANALYTICAL TECHNIQUES FOR MATERIAL CHARACTERIZAION**

Diffraction Methods: X-Ray Diffraction, Neutron Diffraction, Electron Diffraction.Thermal Methods: TGA, DTA, DSC, Thermometric Titration.Adsorption/ Desorption Techniques: BET and EGME methods of determination of external and total surface area.

Syllabus for Ph.D Course Work in Mathematics

(Paper II : Mathematics)

Fuzzy set and fuzzy login: From classical crisp sets to fuzzy sets,operations on fuzzy sets, Introduction to fuzzy arithmetic, fuzzy relation, fuzzy logic, fuzzy relations equations, uncertainty- basedinformation, and applications of fuzzy sets in decision making andphysical sciences.

Chaos and bifurcation: Iteration of functions, phase portraits, periodic points and stable sets, differentiability and hyperbolicity,chaso in perspective, Routes to chaos, Chaos (definitions and examples), characteristics of chaos, bifurcation (definitions and examples).

Optimization Techniques: Unconstrained optimization techniques,constrained optimization techniques and solutions of constrained nonlinear optimization problems, Decision Theory, Introduction to Game theory, Heuristics based optimization problems, Decision Theory, Introduction to Game theory, Heuristics based optimizationTechniques.

Suggested Reading:

1. Discrete Dynamical systems by R.A.Holmgrem
2. Chaos theory tamed by Garnett P. Williams, A Joseph Henry
3. Chaotic Dynamical systems by R.L devaney
4. Bifurcation and chaos in complex systems by Jian – Qiao Sunand Albert luo
5. Operations Research by H.A.Taha
6. Operations Techniques by Chander Mohan and kusum Deep
7. Engineering optimization by S.S.Rao
8. Fuzzy sets and fuzzy logic by Klir and Boyuan
9. Fuzzy sets, Uncertainty and information by Klir and Folger
10. Fuzzy sets and logics by Zimmerman

Syllabus for Ph.D Course Work in Botany

(Paper II : Botany)

1. Microbes and Mycorrhiza and their significance.
2. Biodiversity assessment and conservation: Distribution pattern, endemism,resource utilization and conservation.
3. Modern trend in taxonomy with special reference to Biosystematics.
4. Ecosystems: Diversity and Management with special reference to the Himalaya.
5. Genetic engineering and its implications: Gene isolation, enzymatic synthesisof gene, transgenic crops, PCR (Polymerase Chain Reaction).
6. Biotechnology: Scope and importance of biotechnology, tissue culturetechniques in biotechnology, biotechnology in medicine and agriculture.

Suggested Readings:

1. Mitra, Sandhya (1996) Genetic Engineering. Mc-Millian India Co. Ltd., NewDelhi.
2. Gupta, P.K. (2001). Elements of Biotechnology. Rastogi Publications, Meerut, Pp:1-13.
3. Odum, E.P.(2000). Fundamentals of Ecology. Thomson Asia Pvt. Ltd.,Singapore.
4. Ricklefs. Robert, E. and Gary L. Miller (2009). Ecology (IVth edition). W.H.Freeman and Company, New York.
5. Chawala, H.S (2006). Introduction to Plant Biotechnology. Oxford and IBHPub. Co., New Delhi.
6. Naik, V.N. (2001). Taxonomy of Angiosperms. Tata MC Graw- Hill Pub. Co.Ltd., New Delhi.
7. Christian Leveque and jean-Claude Moun oluv. – Biodiversity, John Wiley &Sons, Ltd.
8. Smith, S.E. & D.J. Read- Mycorrhizal Symbiosis. Academic Press.
9. Mahendra Raj & Ajit Verma – Diversity and Biotechnology of Actomycorrhiza.

Syllabus for Ph.D Course Work in Zoology

(Paper II : Zoology)

(I) Biodiversity: levels of biodiversity, value of biodiversity, regional, nationaland global status of biodiversity, threats to biodiversity, conservation and management of biodiversity, biodiversity act and related international conventions, bio-geographical classification of India.

(II) Environmental stresses and their management, global warming, atmosphericozone, Biodegradation and bioremediation of chemicals.

(III) Chemistry of gene: structure of nucleic acids (A,B,C & Z DNAs RL modelof Sasisepharan, super coiling, genetic & Non-genetic RNA, DNA replication, DNA repair (excision repair, mismatch repair and SOS repair) and genetic diseases in humans, restriction enzymes in cloning, techniquesused in recombinant DNA technology and its application, DNA fingerprinting.

(IV) Social behavior of animals: costs and benefits of group-living, types of social acts, individual adjustments of group-living, parental care and socio-functional organization in apes & monkeys.

(V) Special features of selected micro-organisms: animal viruses, plant viruses, bacteriophages, rikettsiae, mycobacterium, mycoplasma, actinomycetes, fungi and slime-moulds.

(VI) A brief knowledge of environmental endocrinology.

(VII) Cells in culture: requirements for cell culture, aseptic technique, primaryculture, organotypic cultures.

(VIII) Pesticides: brief history, pesticide industries and markets. Dose-response relationship, insecticide, carcinogenic, teratogenic effects.

Syllabus for Ph.D Course Work in Microbiology

(Paper II: Microbiology)

(I) Fermentation: Submerged and solid state fermentations, Types of fermenters, Design and operation of Fermenters, Concepts for selection of a reactor. Growth and product formation kinetics: Monod growth kinetics, Kinetics of colony formation and pellet growth. Concepts for calculation of yield coefficient, specific growth rate, specific productivity, maintenance coefficient. Biomass and substrate balance calculations for chemostat, chemostat with recycles, multistage chemostat systems and fed-batch systems.

(II) Stoichiometry of cell growth: Elemental balance, Electron balance, Theoretical calculation of oxygen demand, Upper limit of yield and energy changes occurring due to growth and product formation. Sterilization: Kinetics of cell death and nutrient degradation during heat killing; Batch and continuous sterilization. Scale up of sterilization. Brief account of downstream processing: Downstream process economics, Cost cutting strategies in downstream processing industry.

(III) Enzymes: commercial applications; Production of industrially important enzymes such as Amylases, Proteases, Lipases. Enzymes used for analytical purpose: Glucose oxidase, cholesterol oxidase; Medicinal enzymes: L-Asparaginase.

(IV) Techniques of enzyme immobilization; Kinetic Parameters for soluble and Immobilized Enzyme Systems, Reactors for Enzyme Catalyzed Reactions. Idealized Enzyme Reactor Performance, Mass transfer limitations in immobilized enzyme reactors.

AGENDA OF THE 4th BOARD OF STUDIES OF FACULTY OF SCIENCE.

AGENDA NO. 08

Any other matter with the permission of Chairman.

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P.K. UNIVERSITY
FACULTY OF SCIENCE
Session 2023 – 2024
Tentative Academic Calendar
(For B.Sc. 1st year & M.Sc. Previous and Final year)
Semester Wise)

S.No.	Particular	Odd Semester Schedule	Even Semester Schedule
1	Starting of Class	1st July 2023	21st December 2023
2	Duration of Session	1st July – 15th Nov 2023	21st Dec 2023 – 17th April 2024
3	Admission Process (To be completed)	As Decided by competent Authority	
4	Commencement of class for 1st semester	1st Aug. 2023	
5	Internal Evaluation/(CCE-I)	3rd week of Aug.	2nd week of Feb.
6	Internal Evaluation/(CCE-II)	3rd week of Sept.	3rd week of March
7	Exam Preparation Leave for Student	20th Nov 2023	22nd April 2024
8	Conduct of Main Examinations for Non Agriculture Faculty	13th Dec 2023- 29th Dec. 2023	3rd May 2024 – 15th May 2024
9	Sessional /internal/ External Evaluation and Award sheet Submission for Courses	13th Dec 2023 – 20th Dec 2023	16th May 2024 – 30th June 2024
10	Semester Break for Student	13th Dec 2023 – 20th Dec 2023	16th May 2024 – 30th June 2024
11	Result Declaration	31st December 2023	30th June 2024

Session 2023 – 2024
Tentative Academic Calendar
[For B.Sc. 2nd & 3rd year (Year Wise)]

S.No.	Particular	Schedule
1	Starting of Class	1st July 2023
2	Duration of Session	1st July 2023 – 30th June 2024
3	Admission Process (To be completed)	As decided by competent Authority
4	Internal Evaluation/(CCE-I)	3rd week of Aug
5	Internal Evaluation/(CCE-II)	2nd week of October
6	Internal Evaluation/(CCE-III)	3rd week of January
7	Exam Preparation Leave for Student	22nd April 2024
8	Conduct of Main Examinations for Non Agriculture Faculty	3rd May 2024 – 15th May 2024
9	Sessional /internal/ External Evaluation and Award sheet Submission for Courses	16th May 2024 – 30th June 2024
10	Yearly Break for Student	16th May 2024 – 30th June 2024
11	Result Declaration	30th June 2024