MAHARSHI DAYANAND UNIVERSITY, ROHTAK

(Established under Haryana Act No. XXV of 1975)

'A+' Grade University accredited by NAAC

No. ACS-II/F-44/2022/18998-19027
Dated: 21.09.2022

To

1. Dr. Rajesh Dhankar, Dean Faculty of Life Sciences & HOD, EVS M.D. University, Rohtak — Chairperson
2. Dr. Vinita Hooda, Professsor & Head, Department of Botany, M.D. University, Rohtak
3. Dr. Vinita Shukla, Professor & Head, Department of Zoology, M.D. University, Rohtak
4. Dr. Rajesh Dabur, Professor & Head, Department of Biochemistry, M.D. University, Rohtak
5. Dr. Minakshi Vashisht, Professor & Head, Department of Genetics, M.D. University, Rohtak
6. Dr. Krishan Kant Sharma, Head, Department of Microbiology, M.D. University, Rohtak
7. Dr. Vikas Hooda, Director, Centre for Biotechnology, M.D. University, Rohtak
8. Dr. Baljeet Singh Yadav, Professor & Head, Department of Food Technology, M.D. University, Rohtak
9. Dr. Amita Suneja Dang, Director, Centre for Medical Biotechnology, M.D. University, Rohtak
10. Dr. Ajit Kumar, Director Centre for Bioinformatics, M.D. University, Rohtak
11. Dr. Jitender Laura, Professor, Department of Environmental Sciences, M.D. University, Rohtak
12. Dr. Anil Kumar Chhilar, Professor Centre for Biotechnology, M.D. University, Rohtak
13. Dr. Minakshi, Professor, Department of Zoology, M.D. University, Rohtak
14. Dr. Vinay Malik, Professor, Department of Zoology, M.D. University, Rohtak
15. Dr. Anita Rani Sehrawat, Professor, Department of Botany, M.D. University, Rohtak
16. Dr. Pushpa Dahiya, Professor, Department of Botany, M.D. University, Rohtak
17. Dr. Santosh Kumar Tiwari, Associate Professor Dept. of Genetics, M.D. University, Rohtak
18. Dr. Asha Sharma, Associate Professor Dept. of Botany, M.D. University, Rohtak
19. Dr. Sudesh Rani, Associate Professor Dept. of Zoology, M.D. University, Rohtak
20. Dr. Sunil Kumar, Associate Professor, Dept. of Environmental Sciences, M.D. University, Rohtak
21. Dr. Sunder Singh, Assistant Professor, Department of Botany, M.D. University, Rohtak
22. Dr. Babita Khosla, Assistant Professor, Department of Environmental Sciences, M.D. University, Rohtak
23. Dr. Vijay Kumar, Assistant Professor, Department for Biochemistry, M.D. University, Rohtak
24. Dr. Ritu Yadav, Assistant Professor, Department of Genetics, M.D. University, Rohtak

25. Dr. Rajeev Kumar Kapoor, Assistant Professor
Dept. of Microbiology, M.D. University, Rohtak
26. Dr. Nater Pal Singh, Assistant Professor,
Centre for Biotechnology, M.D. University, Rohtak
27. Dr. Mehak Dangi, Assistant Professor,
Centre for Bioinformatics, M.D. University, Rohtak
28. Dr. Ritika, Assistant Professor,
Department of Food Technology, M.D. University, Rohtak
29. Dr. Hari Mohan, Assistant Professor,
Centre for Medical Biotechnology, M.D. University, Rohtak
30. Registrar, M.D. University, Rohtak

Secretary

Sub:- Minutes of the Meeting of the Faculty of Life Sciences held on 02.09.2022

Sir/Madam,

I am directed to send herewith a copy of Minutes of the meeting of the Faculty of Life Sciences held on 02.09.2022 at 11:30 A.M in the Committee Room of Chaudhary Ranbir Singh Institute of Social & Economic Change, M.D.University, Rohtak. The objection(s), if any, with regard to recording of the minutes may kindly be sent to the Registrar (Secretary) within 10 days of circulation of these minutes.

Yours faithfully,

Encl: As above

Superintendent (Academic)
For Registrar

Endst. No. ACS-II/F-44/2022/...19028-33... Dated: 21/09/2022

Copy of the above is forwarded to the following for information and necessary action:-

1. Controller of Examinations, M.D. University, Rohtak.
2. Deputy Registrar/Assistant Registrar (Secrecy/ Conduct/R&S), M.D. University, Rohtak.
3. Director (UCC), M.D. University, Rohtak for uploading the minutes of meeting on the University Website.
4. Supdt. (Academic-I), M.D.University, Rohtak with the request to take further necessary action on Point nos. 4 (i & ii), 5 (i & ii) and 6.

02-09-2022

Superintendent (Academic)
For Registrar

MAHARSHI DAYANAND UNIVERSITY, ROHTAK
(Established under Haryana Act No. XXV of 1975)
'A+' Grade University accredited by NAAC

MINUTES FOR THE MEETING OF THE FACULTY OF LIFE SCIENCES HELD ON 02.09.2022 AT 11:30 AM IN THE COMMITTEE ROOM OF SWARAJ SADAN, M.D. UNIVERSITY, ROHTAK

Member present

1. Prof. Rajesh Dhankar, Dean Faculty of Life Sciences — Chairperson
2. Prof. Pushpa Dahiya
3. Prof. Vineeta Shukla
4. Prof. Minakshi
5. Prof. Jitender S. Laura
6. Prof. Meenakshi
7. Prof. Vinay Malik
8. Dr. Krishan Kant Sharma
9. Dr. Vikas Hooda
10. Dr. Amita Suneja Dang
11. Dr. Ajit Kumar
12. Dr. Santosh Kumar Tiwari
13. Dr. Asha Sharma
14. Dr. Sudesh Rani
15. Dr. Sunder Singh
16. Dr. Babita Khosla
17. Dr. Vijay Kumar
18. Dr. Ritu Yadav
19. Dr. Nater Pal Singh
20. Dr. Hari Mohan
21. Registrar — Member Secretary

1. Confirmed the minutes of the previous meeting of the Faculty of Life Sciences held on 09.08.2021 (already circulated).

2. Noted the follow-up action on previous meeting of the Faculty of Life Sciences held on 09.08.2021.

3. Approved the action taken by the Vice-Chancellor in approving the recommendations of PG Board of Studies in Food Technology made in its meeting held on 20.09.2021 that Syllabus & Scheme of Examination of the M.Voc. (Food Science & Nutrition) from the session 2021-22 may be prescribed as per Annexure-I Page 1-49 (already circulated). However, a revised Scheme of Examinations of M.Voc. (Food Science & Nutirtion) 2nd semester was received duly recommended by the HOD (Food Technology) as per annexure –VII, Page-62.

APPROVED THE ACTION TAKEN BY THE VICE-CHANCELLOR IN APPROVING THE SCHEME OF M.Voc. (FOOD SCIENCE AND NUTRITION) FROM THE SESSION 2021-22. FURTHER RESOLVED THAT YEAR BE PREFIXED IN THE COURSE CODES AGAINST EACH PAPER. SCHEME OF EXAMINATIONS BE RECOMMENDED TO THE ACADEMIC COUCIL FOR APPROVAL AS PER ANNEXURE ...I... PAGE ...1-5...

FURTHER RESOLVED THAT THE ORDINANCE FOR 2 YEAR P.G. PROGRAMS BE APPLICABLE FOR M. VOC. (FOOD SCIENCE & NUTRITION) PROGRAM ALSO.

4. Considered the following recommendations of the PG Board of Studies in Botany made vide Reso. no. 4 of its meeting held on 13.06.2022 that:-

(i) Value Added course in Organic Farming may be introduced w.e.f. the session 2022-23.

(ii) The Eligibility condition, Fee Structure, Intake etc. for this Course may be prescribed as per Annexure- II page-50 (already circulated)

(iii) The syllabus and Scheme of Examination of this Course may be prescribed as per Annexure-III Pages 51-53 (already circulated)

(i) RESOLVED THAT THE VALUE ADDED COURSE IN ORGANIC FARMING BE INTRODUCED W.E.F. THE SESSION 2022-23 FOR GIRLS STUDENTS OF THE UTDs. THE PRACTICALS FOR THE SAME WILL BE CONDUCTED IN HOSTEL PREMISES.

(ii) FURTHER RESOLVED THAT THE MATTER WITH REGARD TO ELIGIBILITY CONDITION, INTAKE ETC. BE APPROVED AS PER ORDINANCE OF VALUE ADDED COURSES AND THE MATTER WITH REGARD TO FEE STRUCTURE BE RECOMMENDED TO THE FEE STRUCTURE COMMITTEE.

(iii) ALSO RESOLVED THAT THE SYLLABUS OF THE ABOVE PROGRAM BE APPROVED AND THE SCHEME OF EXAMINATIONS BE RECOMMENDED TO THE ACADEMIC COUNCIL FOR APPROVAL.

A SURVEY MAY BE MADE BY THE CONCERNED DEPARTMENTS THAT IF THE MAIL STUDENTS ARE WILLING TO TAKE UP THE COURSE THEN THIS COURSE MAY BE STARTED FOR THE BOYS ALSO.

5. Considered the following recommendations of the PG Board of Studies in Environmental Sciences made vide Reso. no. 1 of its meeting held on 08.07.2022 that:-

(i) Value Added Course in Waste Management may be introduced w.e.f. the session 2022-23 through ESM Cell in the Department of Environmental Sciences.

(ii) The Eligibility condition, Fee Structure, Intake etc. for this Course may be prescribed as per Annexure- IV page-54 (already circulated)

(iii) The syllabus and Scheme of Examination of this Course may be prescribed as per Annexure-V Pages 55-58 (already circulated)

(i) RESOLVED THAT THE VALUE ADDED COURSE IN WASTE MANAGEMENT BE INTRODUCED IN THE DEPARTMENT OF ENVIRONMENT SCIENCES W.E.F. THE SESSION 2022-23.

(ii) FURTHER RESOLVED THAT THE MATTER WITH REGARD TO ELIGIBILITY CONDITION, INTAKE ETC. BE APPROVED AS PER ORDINANCE AND THE MATTER WITH REGARD TO FEE STRUCTURE BE RECOMMENDED TO THE FEE STRUCTURE COMMITTEE.

(iii) ALSO RESOLVED THAT THE SYLLABUS OF THE ABOVE PROGRAM BE APPROVED AND THE SCHEME OF EXAMINATIONS BE RECOMMENDED TO THE ACADEMIC COUNCIL FOR APPROVAL.

6. Considered the recommendations of the HoD (Food Technology) that the Eligibility for admission to M.Voc. (Food Science & Nutrition) Program from the session 2021-22 may be prescribed as under:-

"B.Sc./B.Voc (Home Science/ Life Science/ Biology/ Food Science/ Health and Nutrition /Sports Nutrition/ Catering and Hotel Management), BAMS, Any other Bachelor's degree in

19/09/22

allied/ related subjects recognized by UGC with at least 50% marks (47.5% marks for SC/ST/Blind/Visually and Differently Abled candidates of Haryana only)"

RESOLVED THAT THE ABOVE ELIGIBILITY CONDITION BE RECOMMENDED TO ACADEMIC COUNCIL FOR APPROVAL.

7. Considered the recommendations of the PGBOS in Bioinformatics made vide Reso. No. 1 of its meeting held on 27.02.2021 that the Syllabus and Scheme of Examinations of M.Sc. Bioinformatics be prescribed w.e.f the session 2022-23 as per annexure-VI, Page 59-61 (already circulated).

RESOLVED THAT THE SYLLABUS OF THE ABOVE PROGRAM BE APPROVED.

FURTHER RESOLVED THAT THE SCHEME OF EXAMINATIONS WITH MODIFICATION IN THE COURSE CODES BE RECOMMENDED TO THE ACADEMIC COUNCIO FOR APPROVAL AS PER ANNEXURE..II. PAGE ..6..8

The meeting ended for vote of thanks to the Chair.

19/09/22

REGISTRAR

DEAN, FACULTY OF LIFE SCIENCES

Annexure - I

Scheme of Examination

M.VOC FOOD SCIENCE AND NUTRITION

(W.E.F. ACADEMIC SESSION 2021-2022)

SEMESTER -1

Paper No	Nomenclature of paper	Credits	Hrs	Max. Marks	Internal Assessment	Total Marks
CORE PAPERS						
21MVOCFSNC1	Principles of Food Science	4	4	80	20	100
21MVOCFSNC2	Food Chemistry	4	4	80	20	100
21MVOCFSNC3	Food Microbiology	4	4	80	20	100
21MVOCFSNC4	Nutritional Biochemistry	4	4	80	20	100
21MVOCFSNC5	Human Physiology	4	4	80	20	100
EXPERIENTIAL LEARNING						
21MVOCFSNEL1	*Industrial/ Hospital visit to minimum three industries (Report to be presented in seminar/workshop		-	-		
LAB COURSES						
Lab Course I (21MVOCFSNL1)	(MVOCFSNC1, MVOCFSNC2 and MVOCFSNC3)	4	8	-	-	100
Lab Course II (21MVOCFSNL2)	(MVOCFSNC4 and MVOCFSNC5)	4	8	-	-	100
Total Credits = 28						700

SEMESTER - 2

Paper No	Nomenclature of paper	Credits	Hrs	Max Marks	Internal Assessment	Total Marks
CORE PAPERS						
21MVOCFSNC6	Fundamentals of Nutrition & Dietetics	4	4	80	20	100
21MVOCFSNC7	Processing of Plant Based Foods	4	4	80	20	100
21MVOCFSNC8	Community Nutrition	4	4	80	20	100
DISCIPLINE SPECIFIC (ELECTIVE) 1 (ANY ONE) (OFF-LINE MODE)						
21MVOCFSND1	Specialty Nutrition	4	4	80	20	100
21MVOCFSND2	Nutrition During Life Cycle	4	4	80	20	100
OPEN ELECTIVE						
	One paper to be opted by students from pool of paper	3	3	80	20	100
FOUNDATION ELECTIVE PAPER						
	One paper to be opted by students from pool of paper	2	2	40	10	50
EXPERIENTIAL LEARNING						
21MVOCFSNE2	*Visit to three Community Nutrition centre/UNICEF Nutrition Camp/Mid-Day Meal Unit/CDS Unit (Report to be presented in seminar/workshop)		-	-		
INNOVATIONAL LEARNING						
21MVOCFSNIL1	Nutrition Care Process of Sports Person In Minimum Three sports			Grading system A, B,C		

LAB COURSES

Lab Course III (21MVOCFSNL3)	(MVOCFSNC6/ MVOCFSNC7, MVOCFSNC8)	4	8			100
Lab Course IV (21MVOCFSNL4)	MVOCFSND1/ MVOCFSND2	4	8			100
Total Credits =29						750

SEMESTER – 3

Paper No	**Nomenclature of paper**	**Credits**	**Hrs**	**Max. Marks**	**Internal Assessment**	**Total Marks**
Core Papers (OFF-LINE MODE)						
22MVOCFSNC9	Therapeutic Nutrition	4	4	80	20	100
22MVOCFSNC10	Processing of Animal Based Foods	4	4	80	20	100
DISCIPLINE SPECIFIC (ELECTIVE) 2 (ANY ONE) (OFF-LINE MODE)						
22MVOCFSND3	Food Toxicology	4	4	80	20	100
22MVOCFSND4	Institutional Food Management & Marketing	4	4	80	20	100
DISCIPLINE SPECIFIC (ELECTIVE) 3 (ANY ONE) (OFF-LINE MODE)						
22MVOCFSND5	Nutraceuticals and Functional Foods	4	4	80	20	100
22MVOCFSND6	Food Safety and Quality Control	4	4	80	20	100
OPEN ELECTIVE (OFF-LINE MODE)						
	One paper to be opted by students from pool of paper	3	3	80	20	100
INDUSTRIAL TRAINING						

22MVOCFSN1	Minimum 4 weeks Industrial/ hospital training in summer vacation after 2nd semester (Report and viva-voce)	2			50	50
EXPERIENTIAL LEARNING						
22MVOCFSNEL3	*Visit to three health and fitness centres/Naturopathy unit/Nutraceuticals manufacturing unit (Report to be presented in seminar/workshop)		-	-		
LAB COURSES						
Lab Course V (22MVOCFSNL5)	MVOCFSNC9 and MVOCFSNC10	4	8	100		100
Lab Course VI (22MVOCFSNL6)	MVOCFSND4/MVOCFSND5 and MVOCFSND6/ MVOCFSND7	4	8	100		100
Total credits = 29						750

SEMESTER-4

Paper No	Nomenclature of paper	Credits	Hours	Max. Marks	Internal Assessment	Total Marks
CORE PAPERS (ON-LINE MODE)						
22MVOCFSNC11	Food Packaging and Nutritional Labeling	4	4	80	20	100
22MVOCFSNC12	Entrepreneurship Development in Food Processing Industry	4	4	80	20	100
On the Job Industrial Training (Minimum Three Months)						

MVOCCSNT2	Training Report and viva-voce	15		100	100	200
MVOCFSNT3	Presentation in Seminar	5		100	100	200
MVOCFSNT4	Maintenance of Log Book	2			100	100

Total Credits: 30 Marks: 700

Note: Students have to undergo a minimum of 3 months of training in the food processing industry, hospitals, health clubs/centres, catering/hotel industry, nutrition counseling centres etc.

****These will be qualifying in nature based upon the satisfactory performance of the student**

- **Guidelines for students undergoing industrial training:**

As per the regulations of UGC the student should undergo industrial training/internship for a minimum period of three months during the fourth semester. Before proceeding on Industrial Training, students must seek instructions from the Principal or the Faculty, who is in-charge of Industrial Training.

- **Internship / industrial training**

Industrial Training refers to work experience that is relevant to professional development prior to graduation. Industrial Training is an essential component in the development of the practical and professional skills required for an Engineer and an aid to prospective employment. It should also be noted that developing an awareness of general workplace behavior and interpersonal skills are important objectives of the Industrial Training experience. At the end of the Industrial Training, students should be able to improve their knowledge and skills relevant to their areas of specialization and at the same time able to relate, apply and adapt relevant knowledge, concepts and theories within an industrial organization, practice and ethics. With this experience and exposure the students should be able to acquire knowledge and skills to compete in the job market.

- **Objectives of industrial training programme:**

The objectives of the Industrial Training include:

- To give students the opportunity to apply the knowledge and skills they have acquired on campus in a real-life work situation.
- To provide students with opportunities for practical, hands-on learning from practitioners in the

Annexure - II

CENTRE FOR BIOINFORMATICS
MAHARSHI DAYANAND UNIVERSITY
M.Sc. (Bioinformatics) Post Graduate Two Year Programs Syllabus

Credit Matrix for M.Sc. - Bioinformatics Program

SEMESTER	HARDCORE COURSES(HC)	SOFT CORE COURSES (SC)	OPEN ELECTIVE COURSES (OE)	FUNDAMENTAL COURSE (FN)	DISSERTATION (HC)	TOTAL
I	28	-	-	-	-	28
II	20	4	3	2	-	29
III	12	12	3	-	-	27
IV	8	-	-	-	20	28
TOTAL	68	16	6	2	20	112

SCHEME OF EXAMINATION – M.Sc. (Bioinformatics)

General information:

Note 1: The Criteria for award of internal assessment of 20% marks shall be as under:

A) One class test : 10 marks.
B) Assignment & Presentation : 5 marks
C) Attendance : 5 marks
Less than 65% : 0 marks
Upto 70% : 2 marks
Upto 75% : 3 marks
Upto 80% : 4 marks
Above 80% : 5 marks

Note 2: Optional courses will be offered subject to availability of requisite resources/ faculty.

CENTRE FOR BIOINFORMATICS
MAHARSHI DAYANAND UNIVERSITY
M.Sc. (Bioinformatics) Post Graduate Two Year Programs Syllabus

SCHEME OF EXAMINATION – M.Sc. (Bioinformatics)

S.No.	Course Code	Nomenclature of course	Credit L	T	P	Total credit	Hours	Maximum marks
1st Semester								
1	16BIN21C1	Cell & Molecular Biology	**4**	**0**	**0**	4	4	80+20 IA
2	16BIN21C2	Biochemistry	**4**	**0**	**0**	4	4	80+20 IA
3	16BIN21C3	Microbiology and Genetics	**4**	**0**	**0**	4	4	80+20 IA
4	22BIN21C4	Immunology& Genetic Engg.	**4**	**0**	**0**	4	4	80+20 IA
5	22BIN21C5	Basic Bioinformatics & Biostatistics	**4**	**0**	**0**	4	4	80+20 IA
6	16BIN21CL1	Lab course I*	**0**	**0**	**4**	4	8	100
7	22BIN21CL2	Lab course II*	**0**	**0**	**4**	4	8	100
Total Credits			**20**	**0**	**8**	**28**	**36**	

* Lab course I pertains to 16BIN21C1and 16BIN21C2; Lab course II pertains to 16BIN21C3, 22BIN21C4 and 22BIN21C5.

S.No.	Course Code	Nomenclature of course	Credit L	T	P	Total credit	Hours	Maximum marks
2nd Semester								
8	22BIN22C1	Advanced Bioinformatics	**4**	**0**	**0**	4	4	80+20 IA
9	16BIN22C2	Programming in C	**4**	**0**	**0**	4	4	80+20 IA
10	16BIN22C3	Computational Biology	**4**	**0**	**0**	4	4	80+20 IA
11	16BIN22D1	Genomics & Proteomics#	**4**	**0**	**0**	4	4	80+20 IA
12	16BIN22D2	Protein Bioinformatics#	**4**	**0**	**0**	4	4	80+20 IA
13	16BIN22OE1	Introduction to Bioinformatics!	**3**	**0**	**0**	3	3	80+20 IA
14	16BIN22FN1	Fundamentals of computer and networking	**2**	**0**	**0**	2	2	40+10 IA
15	22BIN22CL1	Lab course III*	**0**	**0**	**4**	4	8	100
16	16BIN22CL2	Lab course IV*	**0**	**0**	**4**	4	8	100
Total Credits			**21**	**0**	**8**	**29**	**37**	

#One course to be opted out of soft core (SC) courses.

!Open elective (OE): To be chosen from pool of OE courses of University. Students of M.Sc. (Bioinformatics) not to opt for 16BIN22OE1.

* Lab course III pertains to 22BIN22C1 and 16BIN22C2; Lab course IV pertains to 16BIN22C3, 16BIN22D1/16BIN22D2

CENTRE FOR BIOINFORMATICS
MAHARSHI DAYANAND UNIVERSITY

M.Sc. (Bioinformatics) Post Graduate Two Year Programs Syllabus

S.No.	Course Code	Nomenclature of course	Credit L	T	P	Total credit	Hours	Maximum marks
3rd Semester								
17	23BIN23C1	Database Management Systems and Datamining	**4**	**0**	**0**	4	4	80+20 IA
18	17BIN23C2	Molecular Modelling & Drug Designing	**4**	**0**	**0**	4	4	80+20 IA
19	23BIN23DA1	Programming in PERL and HTML#	**4**	**0**	**0**	4	4	80+20 IA
20	17BIN23DA2	Systems Biology#	**4**	**0**	**0**	4	4	80+20 IA
21	17BIN23DB1	Big Data and Cloud Computing#	**4**	**0**	**0**	4	4	80+20 IA
22	23BIN23DB2	Programming in Python and Machine Learning#	**4**	**0**	**0**	4	4	80+20 IA
23	17BIN23OE1	Computer Aided Drug Design!	**3**	**0**	**0**	3	3	80+20 IA
24	23BIN23CL	Lab course V*	**0**	**0**	**4**	4	8	100
25	23BIN23DL	Lab course VI*	**0**	**0**	**4**	4	8	100
Total Credits			**19**	**0**	**8**	**27**	**35**	

Twocourses to be opted out of soft core (SC) courses.

!Open elective (OE): To be chosen from pool of OE courses of University. Students of M.Sc. (Bioinformatics) not to opt for 16BIN23OE1.

***** Lab course V pertains to 23BIN23C1 and 17BIN23C2

*****Lab course VI pertains to 23BIN23SDA1/17BIN23DA2/17BIN23DB1/23BIN23DB2.

S.No.	Course Code	Nomenclature of course	Credit L	T	P	Total credit	Hours	Maximum marks
4th Semester								
26	17BIN24C1	Principles of phylogenomics	**2**	**0**	**2**	4	4	80+20 IA
27	17BIN24C2	Communication Skills for Science & Technology	**2**	**0**	**2**	4	4	80+20 IA
28	17BIN24C3	Dissertation	**20**	**0**	**0**	20	40	300
Total Credits			**24**	**0**	**4**	**28**	**48**	
Cumulative program credit			**83**	**0**	**28**	**112**	**156**	