



**Central University of Himachal Pradesh**

(ESTABLISHED UNDER CENTRAL UNIVERSITIES ACT 2009)

Dharamshala, Himachal Pradesh-176215



# **NAAC Criterion-I**

## **Key Indicator –1.1.2**

**Approved Minutes of relevant BOS  
meeting highlighting the syllabus revision**

### **1.1.2 Evidences**



**Department of Plant Science**

**Central University of Himachal Pradesh, Dharamshala,  
Kangra**



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2	Approved Minutes of the 2 <sup>nd</sup> BOS meeting highlighting the programme name and syllabus revision dt 01/09/2020	PLS-BOS-2/20-1	12
4	Approved Minutes of the 3 <sup>rd</sup> BOS meeting highlighting the syllabus revision dt 27/09/2021	PLS-BOS-3/21-3	22-25

  
**विभागाध्यक्ष, पादप विज्ञान विभाग**  
**Head, Department of Plant Sciences**  
**हिमाचल प्रदेश केंद्रीय विश्वविद्यालय धरमशाला**  
**Central University of Himachal Pradesh, Dharamshala**  
**PO Box: 21, Dharamshala, Himachal Pradesh - 176215**



# हिमाचल प्रदेश केंद्रीय विश्व विद्यालय Central University of Himachal Pradesh

(पादप विज्ञान विभाग / Department of Plant Science)

(जीव विज्ञान स्कूल / School of Life Sciences)

शाहपुर परिसर, ज़िला काँगड़ा, हिमाचल प्रदेश -176206



File No: Plant Science/2-3(Head File)/CUHP/21/493

Dated: 27/03/2023

1.1.2 The following are the programs where **Syllabus Revision** has been carried out during the last five years

## PG Programme in Plant Science (Botany)

Year 2017-18		
Course Code	Name of the Course	Credit
-NIL-		

Year 2018-19		
Course Code	Name of the Course	Credit
BOT 426	Practical Course on Botany-I	4
BOT-524	Practical course on Botany-II	4
BOT 503 A	Algae	2
BOT 506 A	An Introduction to Gymnosperms	2
BOT 504 A	Biology and diversity of Bryophytes and Pteridophytes	2
BOT-599	M. Sc. Dissertation	2
BOT 579	Genetics	2

Year 2019-20		
Course Code	Name of the Course	Credit
-NIL-		

**AGENDA ITEM NO.-PLS-BOS 2/20-1**

**The name of the program from M.Sc Botany to M.Sc Plant Science (Botany) has been proposed to be revised during the 2<sup>nd</sup> Board of studies meeting and same has been recommended.**

**Year 2020-21**

<b>Course Code</b>	<b>Name of the Course</b>	<b>Credit</b>
PLS 401	Fundamentals of Phycology and Mycology	2
PLS 402	Bryophytes, Pteridophytes and Gymnosperms	2
PLS 403	Principles of Microbiology and Plant Pathology	2
PLS 401 (L)	Fundamentals of Phycology and Mycology-Lab	2
PLS 402 (L)	Bryophytes, Pteridophytes and Gymnosperms - Lab	2
PLS 403 (L)	Principles of Microbiology and Plant Pathology -Lab	2
PLS 404	Organic and Natural Farming	2
PLS 405	Histology and Micro techniques	2
PLS 406	Protected cultivation of High Value Crops	2
PLS 407	Commercial Horticultural Crops	2
PLS 408	Mushroom Production	2
PLS 451	Fundamentals of Plant Physiology and Biochemistry	2
PLS 452	Taxonomy of Angiosperms	2
PLS 453	Plant Biotechnology & Genetic Engineering	2
PLS 451 (L)	Fundamentals of Plant Physiology and Biochemistry - LAB	2
PLS 453 (L)	Plant Biotechnology & Genetic Engineering - LAB	2
PLS 454	Advances in Cell Biology	2
PLS 455	Pharmacognosy and Phytochemistry	2
PLS 456	Basic and Advanced Bioinformatics	2
PLS 457	Plant and Society	2
PLS 458	Plant Products and Human Health care	2
PLS 504	Biotic and Abiotic Stress Management	4
PLS 505	Fundamentals of Plant Breeding and Genetics	4
PLS 506	Artificial Intelligence and Plant Sciences	4
PLS 507	Historical Perspectives of Economic Plants of India	4
PLS 508	Community Development	2
PLS 509	Seed Technology	2
PLS 510	Field Methods for Vegetation Mapping	2
PLS 551	Research Methodology and Biostatistics	4
PLS 599	M.Sc. Dissertation	4
PLS 552	Biosafety, IPR and Patenting Issues in Plant Sciences	2
PLS 553	Commercially Important Medicinal & Aromatics Plants	2
PLS 554	Modern Trends in Systematics	2
PLS 555	Advanced Biochemistry	4
PLS 556	Plant diseases & Protection	4

PLS 557	Genomics & Proteomics	4
PLS 558	Herbal Healthcare & Nutraceuticals	4
<b>Year 2021-22</b>		
Course Code	Name of the Course	Credit
PLS 415	Fundamentals of Phycology and Mycology	2
PLS 416	Bryophytes, Pteridophytes and Gymnosperms	2
PLS 415 (L)	Fundamentals of Phycology and Mycology - LAB	2
PLS 416 (L)	Bryophytes, Pteridophytes and Gymnosperms - LAB	2
PLS 417	Fundamentals of Plant Anatomy and Micro Techniques	2
PLS 418	Advances in Cell Biology	2
PLS 419	Principles of Organic and Natural farming	2
PLS 420	Fundamentals of Enzymology	2
PLS 421	Elements of Plant Breeding	2
PLS 422	Protected cultivation of High Value Crops	2
PLS 423	Biosafety, IPR and Patenting Issues in Plant Sciences	2
PLS 424	Gardening and Landscaping	2
PLS 425	Commercial Horticulture Crops	2
IKS	Indian Knowledge System	2
PLS 465	Plant Physiology and Advanced Biochemistry	2
PLS 466	Microbiology and PhytoPathology	2
PLS 467	Advances in Molecular biology	2
PLS 465 (L)	Plant Physiology and Advanced Biochemistry – LAB	2
PLS 466 (L)	Microbiology and PhytoPathology - LAB	2
PLS 468	Bio-analytical Techniques in Plant Science	2
PLS 469	Plant Systematics	2
PLS 470	Principles of Ecology and Environment	2
PLS 471	Community Development	2
PLS 472	Methods for Vegetation Mapping	2
PLS 473	Fundamentals of Seed Technology	2
PLS 474	Historical Perspectives of Economic Plants of India	2
PLS 515	Fundamentals of “Omics” Technologies	4
PLS 516	Ethnobotany and Ethnopharmacology	4
PLS 517	Plant Biotechnology and Genetic Engineering	4
PLS 518	Underutilized Economic plants	4
PLS 519	Fundamentals of Research Methodology	4
PLS 520	Biostatistics	2
PLS 521	Fundamentals of Computer Applications in data analysis	2
PLS 522	Data mining for Review of Literature	2
PLS 523	Research Proposal/Project writing	2

PLS 565	Herbal medicines in Human Health Care	4
PLS 566	In Vitro Plant Biology	4
PLS 567	Plant Stress Biology	4
PLS 568	Grafting techniques in Plants	4
PLS 569	Academic Writings	2
PLS 570	Paper Publications/Seminar, Conferences Presentation at National Level	2
PLS 571	Application of Artificial intelligence in Plant Science	2
PLS 572	Advanced softwares used in Plant Sciences for Data Analysis (GPS, GIS, Image analysis, Biorender, Mendley, Turnitin, Statistical softwares)	2
PLS 595	M.Sc Dissertation (50% Dissertation, 50% Presentation & Viva-Voce)	8

Head  
Department of Plant Science

विभागाध्यक्ष, पादप विज्ञान विभाग  
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हिमाचल प्रदेश केंद्रीय विश्वविद्यालय  
Central University of Himachal Pradesh  
(Established under Central Universities Act 2009)

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File No.: Botany/1-5/BOS/CUHP/18/39

Dated: 11.04.2018

**MINUTES OF THE FIRST BOARD OF STUDIES MEETING HELD ON  
11<sup>TH</sup> APRIL, 2018**

The meeting of the First Board of Studies of the Department of Botany, School of Life Sciences was held on 11<sup>th</sup> April, 2018 in Committee Room of Central University of Himachal Pradesh, Temporary Academic Block, Shahpur. Prof. Ambrish Kumar Mahajan, Head, Department of Botany and Dean, School of Life Sciences welcomed all the Hon'ble members.

Following members attended the meeting:

1. Prof. Ambrish Kumar Mahajan – Head and Convener  
Head, Department of Botany and Dean, School of Life Sciences, Central University of Himachal Pradesh, Temporary Academic Block, Shahpur.
2. Prof. G.A. Shantibala Devi – Subject Expert  
Department of Life Sciences, Manipur University, Manipur.
3. Dr. Arvind Bhatt – Subject Expert  
Department of Biotechnology at Himachal Pradesh University, Summer Hill, Shimla.
4. Prof. Mushtaq Ahmed – Vice Chancellor's Nominee  
Department of Environmental Sciences, School of Earth and Environmental Sciences, Central University of Himachal Pradesh, Temporary Academic Block, Shahpur.
5. Dr. Vikram Singh – Vice Chancellor's Nominee  
Centre for Computational Biology and Bioinformatics, School of Life Sciences, Central University of Himachal Pradesh, Temporary Academic Block, Shahpur.
6. Ms. Nivedita Rana – Special Invitee  
Department of Zoology, School of Life Sciences, Central University of Himachal Pradesh, Temporary Academic Block, Dehra.
7. Dr. Vivek Sharma – Special Invitee  
Department of Zoology, School of Life Sciences, Central University of Himachal Pradesh, Temporary Academic Block, Dehra.

- (26) (21)
8. Dr. Shalini Chandel – Special Invitee  
Department of Botany, School of Life Sciences, Central University of Himachal Pradesh,  
Temporary Academic Block, Dehra.
9. Dr. Pawan Kumar Sharm – Special Invitee  
Department of Botany, School of Life Sciences, Central University of Himachal Pradesh,  
Temporary Academic Block, Dehra.

Following Decision were taken in BOS meeting as per the Agenda.

**Item BOT-BOS-1/18-1:** Approval of Rules of Business for the Board of Studies.

It was unanimously resolved that the draft rules of Business for the Board of Studies presented before the Board of Studies approval as "Rules of Business for the Board of Studies" which would come into effect from this day i.e. Wednesday the 11<sup>th</sup> April, 2018. (Annexure- I)

**Item BOT-BOS-1/18-2:** Approval of Courses for PG and RD Program (As per the Ordinance 4 clause 4 b (i).

The BOS approved the minutes of the CDC, Botany held on 16.08.2017 (Placed as ANNEXURE-A) with minor amendment (s) by adding the following three practical courses of 04 credits each, respectively, for 3<sup>rd</sup> and 4<sup>th</sup> Semester students of M.Sc. Botany who have already been admitted in the University.

1. Practical Course in Botany – I (Course code BOT-426) = 04 credits (Core-open)
2. Practical Course in Botany – II (Course code BOT-524) = 04 credits (Core-open)
3. M.Sc Dissertation (Course code BOT-599) (Core-compulsory)

The BOS also resolved that the course, namely, Genetics & Cytogenetics (BOT -505) which has been listed as a core-compulsory course in the CDC minutes be shifted and placed as a Core-open course.

The BOS further approved that the course curriculum for M.Sc. Botany, in future shall be as per UGC choice based credit system (CBCS). Accordingly, the BOS recommends for approval to the School Board the course curriculum as placed at ANNEXURE-II (to be approved through email).

**Item BOT-BOS-1/18-3:** Approval of Supervisors

BOS members recommend taking up this agenda once the Department will have research scholar.

**Item BOT-BOS-1/18-4:** List of Experts Approved. (Annexure- V)

Head Department of Botany in consultation with the concern faculty members may add any other name to this list depending upon the situation as per need.

**Item BOT-BOS-1/18-5:** Approval of Student's Industrial Training / Education Tours

It was unanimously resolved that Students may go for Industrial Training in different Institutes and Educational Tours.

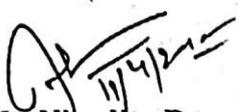
Item BOT-BOS-1/18-6: Invited Talks/Lectures

(95)

(100)

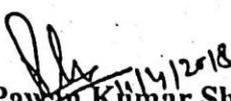
unanimously resolved that Scientists, Professors and Eminent Scholars in the field of Botany should be invited for delivering talks for the benefit of M.Sc. students.

The meeting ended with a vote of thanks to the Chair.

  
Ms. Nivedita Rana,  
(Special Invitee)

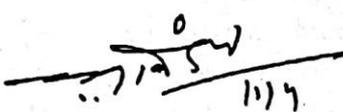
  
Dr. Vivek Sharma,  
(Special Invitee)

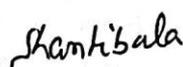
  
Dr. Shalini Chandel  
(Special Invitee)

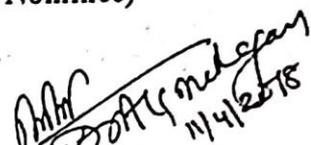
  
Dr. Pawan Kumar Sharma  
(Special Invitee)

Dr. Vikram Singh  
(VC's Nominee)

  
Prof. Mushtaq Ahmed  
(VC's Nominee)

  
Dr. Arvind Bhatt  
(Subject Expert)

  
Prof. G.A. Shantibala Devi  
(Subject Expert)

  
Prof. A.K. Mahajan  
Chairman & Convener

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 E-Mail: [bhtarvind@yahoo.com](mailto:bhtarvind@yahoo.com), [bhatak08@gmail.com](mailto:bhatak08@gmail.com), [arvind.bhatt@hpuniv.ac.in](mailto:arvind.bhatt@hpuniv.ac.in)  
 Website: [www.hpuniv.ac.in/biotech](http://www.hpuniv.ac.in/biotech)

On Monday, November 26, 2018, 11:27:30 AM GMT+5:30, Vikram Singh <[vikramsingh.jnu@gmail.com](mailto:vikramsingh.jnu@gmail.com)> wrote:

Dear all: Greetings!

I agree with the suggested changes and approve the same.

Thanks.

With best regards,  
 Vikram

On Mon, Nov 26, 2018 at 11:19 AM Amrish Mahajan <[akmahajan@rediffmail.com](mailto:akmahajan@rediffmail.com)> wrote:  
 Dear Respected Member,

It has been observed some of the courses approved in last BOS have overlapping course names and course codes with the previously approved courses by the CDC. Since courses approved by The CDC and courses approved by the last BOS have same course codes and course names but different credits, therefore, the names and codes need to be changed for the current semester mentioned in table-1 and table-2 has same course codes for two courses. Changes are suggested in both the tables.

Table-3 needs your attention for approval of new courses which the faculty needs to teach in the current semester

Table-1

S.No	CDC on 16 August 2017	BOS- I 11 April 2018	Suggested changes for 2018 Msc Botany 1 <sup>st</sup> batch
1	Gymnosperms BOT-506 (2017 Batch) 4 credit	Gymnosperms BOT-506 (1 <sup>st</sup> Semester) 2 credit	An Introduction to Gymnosperms BOT 506 A, 2 credit
2	Phycology BOT-503 (2017 Batch) 4 credit	Phycology BOT-503 (1 <sup>st</sup> Semester) 2 credit	Algae-BOT 503A 2 credit
3	Bryophytes and Pteridophytes BOT-504 (2017, 1 <sup>st</sup> Batch) 4 credit	Bryophytes and Pteridophytes BOT-504 (1 <sup>st</sup> Semester) 2 credit	Biology and diversity of Bryophytes and Pteridophytes BOT-504A, 2 credit

Table-2

Change of course code because of repetitive use of same course code

S.No.	Course name and code	Suggested code
1.	Genetics BOT-576	Genetics BOT-579

New Courses to be introduced

Table-3

Elective Specialization courses for 2017 Batch 1<sup>st</sup> Batch

New courses to be introduced

S. No.	Course Name	Course Code
1	Fundamentals of Biochemistry	BOT-581
2	Environmental Biotechnology	BOT-580



Table-4 : permission to run these courses to M.SC students  
**Core Open courses for 2017 BATCH**  
**Courses opted from BOS-I held on 11<sup>th</sup> April 2018**

S.No.	Course Name	Course Code
1	Economic Botany and Medicinal Plants	BOT 577
2	Biosafety, IPR and Patenting	BOT-576

It is requested to kindly send your kind approval at per your earliest convenience as the course are presently running and students are supposed to take the exam from December 2018 onwards

with Kid Regards

Prof. A.K. Mahajan  
 Dean, School of Life Sciences  
 Head, Deptt. of Botany & Deptt. of Zoology  
 Director, Computational Biology/Bioinformatics; Former Provost, CUHP,  
 Chairman, Equal Opportunity cell, Chairman, University-Industry interface cell, Former Dean, School of Life  
 Sciences, Ex-Scientist (on lien), Wadia Institute of Himalayan Geology, Dehra Dun and  
 Former Dean School of Earth and Environmental Sciences  
 Former HOD, Department of Environmental Sciences  
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 Vikram Singh, PhD

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Central University of Himachal Pradesh

Agenda

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Department of Plant Sciences

School of Life Sciences

## AGENDA



**2<sup>nd</sup> BOARD OF STUDIES MEETING**  
TO BE HELD ON 01<sup>st</sup> SEPTEMBER, 2020 at TAB SHAHPUR

**Venue: Seminar Hall,**  
Central University of Himachal Pradesh  
Temporary Academic Block, Shahpur



# हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

## Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

अस्थाई शैक्षणिक खण्ड, शाहपुर, जिला कांगड़ा, हिमाचल प्रदेश - 176206  
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### AGENDA-INDEX

Agenda Item No.	PARTICULARS	Information
PLS-BOS-2/20-1	Approval for Change the name of Degree i.e. from M.Sc. Botany to M.Sc. Plant Sciences (Botany).	
PLS-BOS-2/20-2	Approval of the Minutes of the 1 <sup>st</sup> Board of Studies meeting held on 11.04.2018	Annexure -I
PLS-BOS-2/20-3	Approval for Restructure of the Course Curriculum and addition of New Courses for the M.Sc. Plant Sciences (Botany) in the CBCS format (for 2020 Batch onwards).	Annexure- II
PLS-BOS-2/20-4	Approval for framing New Courses for Ph.D. programme in the Department of Plant Sciences in the CBCS format (for 2020 Batch onwards).	Annexure-III
PLS-BOS-2/20-5	Approval of the Faculty Members of the Department of Plant Sciences to become M.Phil./Ph.D. Supervisor/Guide.	
PLS-BOS-2/20-6	Approval of the allotment of Supervisor/Guide for the newly admitted Ph.D. Scholars (2020 batch).	
PLS-BOS-2/20-7	Approval of List of Experts as Examiners for the Practical and Viva Voce Examinations of M.Sc. Plant Sciences (Botany)	Annexure-IV
PLS-BOS-2/20-8	Any item with the permission of the Chair	

31/8/2020  
 Prof. Pardeep Kumar  
 Head,  
 Department of Plant Sciences

(128)

The Chairman welcomed all the Hon'ble members and briefed about the past activities and also about various agenda items to be discussed in the meeting which were sent in advance to all members through e-mail including out-side experts. Various Agenda Items were placed before the committee and after detailed discussion and deliberations on each, the following decisions were taken :

**AGENDA ITEM NO. - PLS-BOS-2/20-1**

**Proposal for Change the name of Degree from M.Sc. Botany to M.Sc. Plant Sciences (Botany).**

**Suggestions':**

The proposal for change of nomenclature of the Master's Degree from "M.Sc.-Botany" to "M.Sc.-Plant Sciences" was placed before the committee by the Head and Convener as per the recommendation of the Departmental Council of CUHP. However, while agreeing to change the name for betterment, it was suggested that the future possible repercussions of the decision should also be considered so that the students are not affected by this decision in future w.r.t. the job opportunities in the field of Botany. There was suggestion from Prof. Arvind Kumar Bhatt, Subject Expert, that if the name of the M.Sc. Degree is to be changed which seems better, it should have equivalence to M.Sc. Botany as per requirement of Himachal Pradesh Public Service Commission or any other commission in the State or other educational Institutions in the country so that the pass-outs can continue to get benefit of Botany subject like the past practice.

Dr. Vikram Singh, VC's Nominee suggested that the M.Sc. students should be provided with a Certificate mentioning that M.Sc. Plant Sciences will be equivalent to M.Sc. Botany degree of any other UGC recognised University/ Institutes.

**Decision:**

It was unanimously recommended that the name of Master's Degree should be M.Sc.-Plant Sciences (Botany) alongwith a Certificate that "Degree will be equivalent to M.Sc. Botany".

**AGENDA ITEM NO. - PLS-BOS-2/20-2**

Approval of the Minutes of the 1<sup>st</sup> Board of Studies meeting held on 11.04.2018 attached as Annexure I.

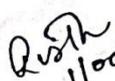
**Decision:**

**The Minutes of the first meeting of the BoS were Approved**

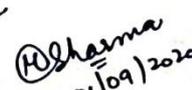
**Agenda Item No. - PLS-BOS-2/20-3**

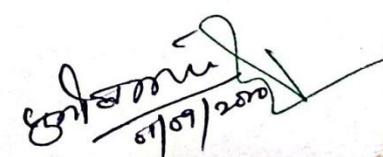
Proposal for restructure of the course curriculum and addition of new courses for the M.Sc. Plant Sciences (Botany) as per detail given below and in the CBCS format (for 2020 Batch onwards) as given in Annexure -II.

  
01/09/2020

  
11/09/2020

  
11/09/2020

  
01/09/2020

  
01/09/2020

suggestions':

(129)

The proposal for restructuring of the current course curriculum was placed before the BoS in view of the requirement for imparting better knowledge and practical skills to the students with justification. The members deliberated upon the tabled new structure as recommended by the Departmental Council of Department of Plant Sciences, CUHP and suggested several changes for betterment. It was suggested that in the beginning foundation courses be preferred and thereafter as the students gain basic knowledge, gradually advanced and application-oriented courses be provided. In addition, the course curriculum must contain the components of skill, more hands-on training during practicals and also exposure to advanced fields so that they can help to contribute in various related fields/disciplines in future. Finally, after detailed deliberations, the new course curriculum with addition of few new courses and modification of others and re-shifting of the courses was recommended for Masters Degree of M.Sc. Plant Sciences (Botany) in the CBCS format (for 2020 Batch onwards) as per the detail given below and in Annexure - II.

**SEMESTER-I**

S. No.	Courses Name	Courses Code	Credits
<b>Core Compulsory Courses (Total Credits = 12)</b>			
1	Fundamentals of Phycology and Mycology	PLS 401	2
2	Bryophytes, Pteridophytes and Gymnosperms	PLS 402	2
3	Principles of Microbiology and Plant Pathology	PLS 403	2
4	Fundamentals of Phycology and Mycology-Lab	PLS 401 (L)	2
5	Bryophytes, Pteridophytes and Gymnosperms - Lab	PLS 402 (L)	2
6	Principles of Microbiology and Plant Pathology -Lab	PLS 403 (L)	2
<b>*Core Open / Elective open Courses (Total Credits =04)</b>			
1	Organic and Natural Farming	PLS 404	2
2	Histology and Micro techniques	PLS 405	2
3	Protected cultivation of High Value Crops	PLS 406	2

**Human Making and Skill Development Courses to be offered by the Department of Plant Sciences**

<b>Human Making Courses (Total Credits =02)</b>			
1	Commercial Horticultural Crops	PLS 407	2
<b>Skill Development Courses (Total Credits = 02)</b>			
1	Mushroom Production	PLS 408	2

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01/09/2020

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01/09/2020

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11/09/2020

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01/09/2020

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11/09/2020

**SEMESTER-II**

126

No.	Courses Name	Courses Code	Credits
<b>Core Compulsory Courses (Total Credits = 12)</b>			
1.	Fundamentals of Plant Physiology and Biochemistry	PLS 451	2
2.	Taxonomy of Angiosperms	PLS 452	4
3.	Plant Biotechnology & Genetic Engineering	PLS 453	2
4.	Fundamentals of Plant Physiology and Biochemistry - LAB	PLS 451 (L)	2
5.	Plant Biotechnology & Genetic Engineering - LAB	PLS 453 (L)	2
<b>*Core Open / Elective open Courses (Total Credits =04)</b>			
1.	Advances in Cell Biology	PLS 454	2
2.	Pharmacognosy and Phytochemistry	PLS 455	2
3.	Basic and Advanced Bioinformatics	PLS 456	2

**Human Making and Skill Development Courses to be offered by the Department of Plant Sciences**

<b>Human Making Course (Total Credits = 02)</b>			
1.	Plant and Society	PLS 457	2
<b>Skill Development Course (Total Credits = 02)</b>			
1.	Plant Products and Human Health care	PLS 458	2

**SEMESTER- III**

S. No.	Courses Name	Courses Code	Credits
<b>Core Compulsory Courses (Total Credits = 10)</b>			
1	Advances in Molecular Biology	PLS 501	2
2	Modern Bio-analytical Techniques	PLS 502	2
3	Principles of Ecology and Environment	PLS 503	2
4	Advances in Molecular Biology - LAB	PLS 501 (L)	2
5	Principles of Ecology and Environment - Lab	PLS 503 (L)	2
<b>Core Elective (Specialization) (Total Credits = 08)</b>			
1	Biotic and Abiotic Stress Management in Plants	PLS 504	4
2	Fundamentals of Plant Breeding and Genetics	PLS 505	4
3	Artificial Intelligence and Plant Sciences	PLS 506	4
4	Historical Perspectives of Economic Plants of India	PLS 507	4
<b>Core Open / Elective open Courses (Total Credits = 02)</b>			
1	Community Development	PLS 508	2
2	Seed Technology	PLS 509	2
3	Field Methods for Vegetation Mapping	PLS 510	2

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Page 4 of 7

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**SEMESTER-IV**

S. No.	Courses Name	Courses Code	Credits
<b>Core Compulsory Courses (Total Credits = 08)</b>			
1.	Research Methodology and Biostatistics	PLS 551	4
2.	M.Sc. Dissertation	PLS 599	4
<b>Core Open / Elective open Courses (Total Credits =04)</b>			
1.	Biosafety, IPR and Patenting Issues in Plant Sciences	PLS 552	2
2.	Commercially Important Medicinal & Aromatics Plants	PLS 553	2
3.	Modern Trends in Systematics	PLS 554	2
<b>Core Elective (Specialization) (Total Credits =08)</b>			
1.	Advanced Biochemistry	PLS 555	4
2.	Plant diseases & Protection	PLS 556	4
3.	Genomics & Proteomics	PLS 557	4
4.	Herbal Healthcare & Nutraceuticals	PLS 558	4

The Subject Experts suggested the following major amendments/ rectifications which after discussion were agreed by all members of BoS:

1. Research Methodology be shifted from 1<sup>st</sup> to 4<sup>th</sup> Semester and renamed as "Research Methodology and Biostatistics".
2. Industrial Microbiology be replaced with Plant Biotechnology in 2<sup>nd</sup> Semester
3. Plant Biotechnology & Genetic Engineering, Core Elective from 4<sup>th</sup> Semester be shifted to 2<sup>nd</sup> Semester as Core Compulsory Course.
4. Community Development be added as Core Open / Elective open Course replacing "Fundamentals of Enzymology" in 3<sup>rd</sup> Semester
5. Principles of Ecology and Environment be shifted from 4<sup>th</sup> to 3<sup>rd</sup> Semester
6. Artificial Intelligence and Plant Sciences be added in 3<sup>rd</sup> Semester
7. Biostatistics and Bioinformatics be renamed as Basic and Applied Bioinformatics as Core Open course in 2<sup>nd</sup> semester
8. Herbal Healthcare and Nutraceuticals was added as one of the Core Open/ Elective Courses in 4<sup>th</sup> Semester.

**Decision:**

All members agreed and approved the list of above new courses with above minor modifications and need based reshuffling.

**AGENDA ITEM NO. – PLS-BOS-2/20-4**

Proposal for framing New Courses for Ph.D. programme in the Department of Plant Sciences in the CBCS format (for 2020 Batch onwards) as given in Annexure III.

**Decision:**

Approved

*[Signature]*  
01/09/2020

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01/09/2020

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11/09/20

Page 5 of 7

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01/09/2020

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11/09/20

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01/09/2020

Proposal of List of Experts as Examiners for the Practical and Viva Voce Examinations of M.Sc. Plant Sciences (Botany) as given in Annexure IV.

In accordance with the draft ordinance 4(i), Section 23 and Statute 16(2) of the Central Universities Act 2009, section 4(b) i and ii, the Head, Department of Plant Sciences placed before the members of the Board of Studies (BoS) the list of examiners for M.Sc. Practicals and Viva Voce Examination for their approval, as per list attached at Annexure IV.

**Decision:**

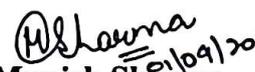
All members agreed and approved the list of examiners as proposed at Annexure IV. It was also suggested that the list will be updated regularly by the faculty members of the Department of Plant Sciences (DoPS) with the consent of the HoD, Plant Sciences and the same be reported in the next meeting of BoS. It was also suggested that preferably the subject/ course experts be invited for specific courses. The BoS also recommended that, if needed, HoD, Plant Sciences may invite a Subject Expert (External Examiner) not included in the list on the recommendations of the concerned faculty member(s) and after approval of competent university authority.

AGENDA ITEM NO. – CBB-BOS-5/18-8

Any item with the permission of the Chair: No item was taken

*The meeting ended with a vote of thanks to the chair.*

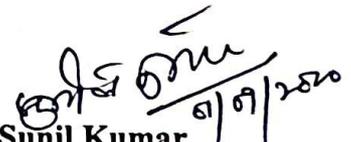
  
Dr. Ashu Chaudhary,  
(Special Invitee)

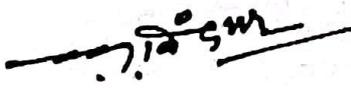
  
Dr. Munish Sharma,  
(Special Invitee)

  
Dr. Rishi Thakur  
(Special Invitee)

  
Dr. Divya V. Nair  
(Member)

  
Dr. Vikram Singh  
(VC's Nominee)

  
Dr. Sunil Kumar  
(VC's Nominee)

  
Prof. Arvind Kumar Bhatt  
(Subject Expert)

  
Prof. G.A. Shantibala Devi  
(Subject Expert)

  
Prof. Pardeep Kumar  
Chairman & Convener

TABLE-I: Curricular Framework for M.Sc. Plant Sciences (Botany) based on Choice Based Credit System (CBCS) (Batch: 2020-21 onwards)

Semester	Credits	Core - Compulsory	Credits	Credits	Core Open	Credits	
I	12	PLS 401 - Fundamentals of Phycology and Mycology	2	4	PLS 404 - Organic and Natural Farming	2	
		PLS 402 - Bryophytes, Pteridophytes and Gymnosperms	2		PLS 405 - Histology and Micro techniques	2	
		PLS 403 - Principles of Microbiology and Plant Pathology	2		PLS 406 - Protected cultivation of High Value Crops	2	
		PLS 401 (L) - Fundamentals of Phycology and Mycology-Lab	2				
		PLS 402 (L) Bryophytes, Pteridophytes and Gymnosperms - Lab	2				
		PLS 403 (L) - Principles of Microbiology and Plant Pathology -Lab	2				
II	12	PLS 451 - Fundamentals of Plant Physiology and Biochemistry	2	4	PLS 454 - Advances in Cell Biology	2	
		PLS 452 - Taxonomy of Angiosperms	4		PLS 455 - Pharmacognosy and Phytochemistry	2	
		PLS 453 - Plant Biotechnology and Genetic Engineering	2		PLS 456 -Basic and Advanced Bioinformatics	2	
		PLS 451 (L) - Fundamentals of Plant Physiology and Biochemistry-LAB	2				
		PLS 453 (L) - Plant Biotechnology and Genetic Engineering- LAB	2				
Semester	Credits	Core - Compulsory	Credits	Credits	Elective Open	Credits	
III	10	PLS 501 - Advances in Molecular Biology	2	2	PLS 508 - Community Development	2	
		PLS 502 - Modern Bio-analytical Techniques	2		PLS 509- Seed Technology	2	
		PLS 503 - Principles of Ecology & Environment	2		PLS 510 - Field Methods for Vegetation Mapping	2	
		PLS 501 (L) - Advances in Molecular Biology -Lab	2				
		PLS 503 (L) - Principles of Ecology & Environment - LAB	2				
IV	8	PLS 551 - Research Methodology and Biostatistics	4	4	PLS 552 - Biosafety, IPR and Patenting Issues in Plant Sciences	2	
		PLS 599 - M.Sc. Dissertation	4		PLS 553 - Commercially Important Medicinal & Aromatics Plants	2	
						PLS 554 - Modern Trends in Systematics	2
Semester	Credits	Elective (Specialization)	Credits	Semester	Credits	Elective (Specialization)	Credits
III	8	PLS 504 - Biotic and Abiotic Stress Management <i>in Plants</i>	4	IV	8	PLS 555 - Advanced Biochemistry	4
		PLS 505 - Fundamentals of Plant Breeding and Genetics	4			PLS 556 - Plant diseases & Protection	4
		PLS 506 - Artificial Intelligence and Plant Sciences	4			PLS 557 - Genomics & Proteomics	4
		PLS 507- Historical Perspectives of Economic Plants of India	4			PLS 558 - Herbal Healthcare and Nutraceuticals	4

*01/05/2020*     *01/09/2020*     *01/10/2020*     *01/11/2020*     *01/12/2020*     *01/01/2021*

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# Central University of Himachal Pradesh

Department of Plant Sciences

School of Life Sciences

## AGENDA



**3<sup>rd</sup> BOARD OF STUDIES MEETING**  
TO BE HELD ON 27<sup>th</sup> SEPTEMBER, 2021 at SHAHPUR CAMPUS

**Mode:** Online/Offline

**Venue:** Seminar Hall,

**Time:** 11:00 AM

Central University of Himachal Pradesh  
Temporary Academic Block, Shahpur

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हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय  
Central University of Himachal Pradesh  
(Established under Central Universities Act 2009)

शाहपुर परिसर, जिला काँगड़ा, हिमाचल प्रदेश -176206  
Shahpur Campus, Distt. Kangra (HP) - 176206  
Website: [www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)



कार्यसूची-अनुक्रमणिका

Agenda Item No.	PARTICULARS	Information
नद PLS-BOS-3/21-1	पादप विज्ञान विभाग की 2 <sup>nd</sup> पाठ्य समिति (BOS) के कार्यवृत्त (Minutes) अनुमोदन हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-I
नद PLS-BOS-3/21-2	पादप विज्ञान विभाग के M.Sc. Botany में पढ़ाये गए एक की कोर्स कर्ड से दो अलग अलग पाठ्यक्रमों के नामों के कोर्स कोड में बदलाव/संशोधन/प्रतिशोधित हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-II
नद PLS-BOS-3/21-3	पादप विज्ञान विभाग के PG Plant Sciences (Botany) के लिए National Education Policy-2020 (NEP-2020) के आधार पर नए पाठ्यक्रमों को जोड़ने और पाठ्यक्रमों को पुनर्गठन /संशोधित (restructure/Implementation) करने हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-III
नद PLS-BOS-3/21-4	National Education Policy-2020 के आधार पर पादप विज्ञान विभाग के PG Plant Sciences (Botany) में विद्यार्थियों के प्रवेश और प्रस्थान (Entry and Exit) विकल्प अनुमोदन हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-IV
नद PLS-BOS-3/21-5	पादप विज्ञान विभाग के शोध छात्रों के लिए Ph.D Course Work के लिए दो Core-Compulsary कोर्स आरम्भ करने हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-V
नद PLS-BOS-3/21-6	पादप विज्ञान विभाग के शोध छात्र पुष्पा गुलेरिया और मनीषा देवी के लिए पर्यवेक्षक बदलने हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-VI
नद PLS-BOS-3/21-7	पादप विज्ञान विभाग के सहायक प्रोफेसर डॉ. अशुन चौधरी के MMDU, Mullana (Ambala) के छात्र आशुतोष दीक्षित के सह-पर्यवेक्षक/सह-मार्गदर्शक बनने हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-VII
नद PLS-BOS-3/21-8	पादप विज्ञान विभाग के वर्ष 2020-21 सत्र के लिए प्रवेश हुए शोध छात्रों के लिए अनुसंधान सलाहकार समिति (RAC) अनुमोदन हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-VIII
नद PLS-BOS-3/21-9	पादप विज्ञान विभाग के PG छात्रों के अंत अवधि के प्रैक्टिकल / नॉखिक परीक्षाओं के लिए विषय विशेषज्ञों की अद्यतन सूची के अनुमोदन हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-IX
नद PLS-BOS-3/21-10	पादप विज्ञान विभाग में कौशल क्षमता वृद्धि (Skill Ability Enhancement) हेतु एक Certificate Course अनुमोदित करने हेतु प्रस्ताव प्रस्तुत हैं।	अनुलग्नक-X
नद PLS-BOS-3/21-11	Himalayan Life Science Society द्वारा Journal of Himalayan Life Sciences के अनुमोदन हेतु प्रस्ताव प्रस्तुत हैं।	
नद PLS-BOS-3/21-12	कोई अन्य मामले जो कि अध्यक्ष की अनुमति से विचार- विमर्श किए जाएंगे।	

*(Signature)*

**मद PLS-BOS-3/21-1:** पादप विज्ञान विभाग की 2<sup>nd</sup> पाठ्य समिति (BOS) के कार्यवृत्त (Minutes of Meeting) को अनुमोदित किया गया (अनुलग्नक-I)।

**मद PLS-BOS-3/21-2:** पादप विज्ञान विभाग के M.Sc. Botany में पढ़ाये गए एक की कोर्स कार्ड से दो अलग अलग पाठ्यक्रमों के नामों के कोर्स कोड को प्रतिशोधित करने के प्रस्ताव को अनुमोदित किया गया ।

जिसका विवरण इस प्रकार से है

क्र सं	शैक्षणिक सत्र	सेमेस्टर	कोर्स कोड	कोर्स नाम	क्रेडिट
1.	2018	3 <sup>rd</sup>	BOT 515 A	Microbiology and Plant Pathology	4
	2019	4 <sup>th</sup>	BOT 515	M.Sc. Dissertation	4
क्र सं	शैक्षणिक सत्र	सेमेस्टर	कोर्स कोड	कोर्स नाम	क्रेडिट
2.	2018	1 <sup>st</sup>	BOT 514	Cytogenetics and Molecular Biology	2
	2019	4 <sup>th</sup>	BOT 514 L	Practical Course on Cytogenetics Molecular Biology, Microbiology	2

**मद PLS-BOS-3/21-3:** पादप विज्ञान विभाग के PG Plant Sciences (Botany) के लिए National Education Policy-2020 (NEP-2020) के आधार पर नए पाठ्यक्रमों को जोड़ने और पाठ्यक्रमों को पुनर्गठन/संशोधित (restructure/Implementation) करने हेतु प्रस्ताव को अनुमोदित किया गया (अनुलग्नक-II)।

**मद PLS-BOS-3/21-4:** National Education Policy-2020 के आधार पर पादप विज्ञान विभाग के PG Plant Sciences (Botany) में विद्यार्थियों के प्रवेश और प्रस्थान (Entry and Exit) विकल्प अनुमोदन हेतु प्रस्ताव को अनुमोदित किया गया ।

जिसका विवरण इस प्रकार से है

S.No.	Entry Semester	Exit Semester	Conditions	Certificate/Diploma/ Degree/Advance Diploma/Others
1	1 <sup>st</sup>	2 <sup>nd</sup>	Candidate has to successfully complete the all courses offered in 1 <sup>st</sup> to 2 <sup>nd</sup> semesters	PG Diploma in Plant Science
2	1 <sup>st</sup>	4 <sup>th</sup>	Candidate has to successfully complete the all courses offered in 1 <sup>st</sup> to 4 <sup>th</sup> semesters.	M.Sc. in Plant Science (Botany)
3	3 <sup>rd</sup>	4 <sup>th</sup>	Candidate has to successfully complete the all courses offered in 1 <sup>st</sup> to 4 <sup>th</sup> semesters.	M.Sc. in Plant Science (Botany)

**मद PLS-BOS-3/21-5:** पादप विज्ञान विभाग के शोध छात्रों के लिए Ph.D Course Work के लिए दो Core-Compulsary कोर्स आरम्भ करने हेतु प्रस्ताव को अनुमोदित किया गया (अनुलग्नक-III) ।

*Shaame* *Sharma* *Sharma* *Sharma*

मद PLS-BOS-3/21-12: पाठ्य समिति (BOS) के विषय विशेषज्ञों द्वारा यह सुझाव दिया गया कि विश्वविद्यालय द्वारा किसी निजी कम्पनी से MOU करना चाहिए ताकि मौखिक कार्य को संचलित करने में कोई समस्या उत्पन्न ना हो ।

The meeting ended with the thanks to the Chair.

Signatures:

1. प्रो. प्रदीप कुमार  
(अध्यक्ष/संयोजक)  
विभागाध्यक्ष, पादप विज्ञान विभाग

  
27/9/21

2. प्रो. आदर्श पाल विज.,(विषय विशेषज्ञ)  
प्रोफेसर (यूजीसी-एचआरडी),  
वानस्पतिक एवं पर्यावणीय विज्ञान विभाग,  
गुरु नानक देव विश्वविद्यालय, अमृतसर, पंजाब

(Online)

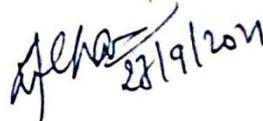
3. डॉ. चमन लाल ठाकुर,(विषय विशेषज्ञ),  
वानिकी विभाग,  
डॉ. वई.एस.परमार विश्वविद्यालय,  
नौनी, हि.प्र.

(Online)

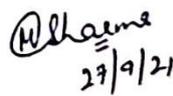
4. डॉ. सुनील कुमार (VC Nominee)  
एसोसिएट प्रोफेसर  
जंतु विज्ञान विभाग

  
27/9/21

5. डॉ. महेश कुल्हारिया,(VC Nominee)  
एसोसिएट प्रोफेसर  
संगणकीय जीव विज्ञान एवं जैव सूचना केन्द्र

  
28/9/2021

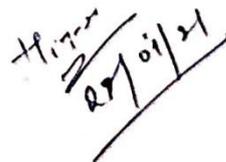
6. डॉ. मुनीश शर्मा,(Special Invite)  
सहायक प्रोफेसर, पादप विज्ञान विभाग

  
27/9/21

7. डॉ. अशुन चौधरी,(Special Invite)  
सहायक प्रोफेसर, पादप विज्ञान विभाग

  
27/09/21

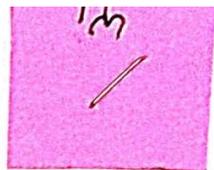
8. डॉ. हिमाद्री, (Special Invite)  
Resource Person, पादप विज्ञान विभाग

  
27/09/21

The link of the BOS meeting :

meet.google.com/gob-awzt-fgu

192



**LIST OF COURSES TO BE OFFERED FOR M.SC. PLANT SCIENCES (BOTANY)**  
**(2021 BATCH ONWARDS) NEP-2020**

**SEMESTER-I**

S. No.	Courses Name	Courses Code	Credits
<b>Major Courses (Total Credits = 10)</b>			
1	Fundamentals of Phycology and Mycology	PLS 415	2
2	Bryophytes, Pteridophytes and Gymnosperms	PLS 416	2
3	Fundamentals of Phycology and Mycology - LAB	PLS 415 (L)	2
4	Bryophytes, Pteridophytes and Gymnosperms - LAB	PLS 416 (L)	2
5	Fundamentals of Plant Anatomy and Micro Techniques	PLS 417	2
<b>*Minor Courses (Total Credits =04)</b>			
1	Advances in Cell Biology	PLS 418	2
2	Principles of Organic and Natural farming	PLS 419	2
3	Fundamentals of Enzymology	PLS 420	2
4	Elements of Plant Breeding	PLS 421	2
<b>*Vocational / Skill Courses (Total Credits =04)</b>			
1	Protected cultivation of High Value Crops	PLS 422	2
2	Biosafety, IPR and Patenting Issues in Plant Sciences	PLS 423	2
3	Gardening and Landscaping	PLS 424	2
4	Commercial Horticulture Crops	PLS 425	2
<b># Indian Knowledge system (Total Credits=02)</b>			
1	# IKS	#	2

# Course will be developed by University Level Committee  
\*Students have to opt two courses (4 credits)

*Oshanna* *[Signature]* *[Signature]*

**SEMESTER-II**

S. No.	Courses Name	Courses Code	Credits
<b>Major Courses (Total Credits = 12)</b>			
1.	Plant Physiology and Advanced Biochemistry	PLS 465	2
2.	Microbiology and PhytoPathology	PLS 466	2
3	Advances in Molecular biology	PLS 467	2
4	Plant Physiology and Advanced Biochemistry – LAB	PLS 465 (L)	2
5	Microbiology and PhytoPathology - LAB	PLS 466 (L)	2
6	Advances in Molecular biology - LAB	PLS 467 (L)	2
<b>*Minor Courses (Total Credits =04)</b>			
1	Bio-analytical Techniques in Plant Science	PLS 468	2
2	Plant Systematics	PLS 469	2
3	Principles of Ecology and Environment	PLS 470	2
<b>**Vocational / Skill Courses (Total Credits =02)</b>			
1	Community Development	PLS 471	2
2	Methods for Vegetation Mapping	PLS 472	2
3	Fundamentals of Seed Technology	PLS 473	2
<b>Indian Knowledge system (Total Credits=02)</b>			
1	Historical Perspectives of Economic Plants of India	PLS 474	2

**\*Students have to opt two courses (4 credits)**

**\*\*Students have to opt one course (2 credits)**

*R. Sharma*

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**SEMESTER-III**

S. No.	Courses Name	Courses Code	Credits
<b>Elective Specialization (Total Credits = 04)</b>			
1	Fundamentals of "Omics" Technologies	PLS 515	4
2	Ethnobotany and Ethnopharmacology	PLS 516	4
3	Plant Biotechnology and Genetic Engineering	PLS 517	4
4	Underutilized Economic plants	PLS 518	4
<b>Research Methodology (Total Credits =04)</b>			
1	Fundamentals of Research Methodology	PLS 519	4
<b>(Software based Data Analysis) (Total Credits = 04)</b>			
1	Biostatistics	PLS 520	2
2	Fundamentals of Computer Applications in data analysis	PLS 521	2
<b>(Review of Literature, Research proposal) (Total Credits = 08)</b>			
1	Data mining for Review of Literature	PLS 522	4
2	Research Proposal/Project writing	PLS 523	4

*P. Sharma* *Ah* *m*

**SEMESTER-IV**

S. No.	Courses Name	Courses Code	Credits
<b>Elective Specialization (Total Credits = 04)</b>			
1	Herbal medicines in Human Health Care	PLS 565	4
2	<i>In Vitro</i> Plant Biology	PLS 566	4
3	Plant Stress Biology	PLS 567	4
4	Grafting techniques in Plants	PLS 568	4
<b>(Total Credits = 04)</b>			
1	Academic Writings	PLS 569	2
2	Paper Publications/Seminar, Conferences Presentation at National Level	PLS 570	2
<b>(Software based Data Analysis) (Total Credits = 04)</b>			
1	Application of Artificial intelligence in Plant Science	PLS 571	2
2	Advanced softwares used in Plant Sciences for Data Analysis (GPS, GIS, Image analysis, Biorender, Mendley, Turnitin, Statistical softwares)	PLS 572	2
<b>Dissertation and Viva -Voce (Total Credits = 08)</b>			
1	M.Sc Dissertation (50% Dissertation, 50% Presentation & Viva-Voce)	PLS 595	8

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