1. Brief Introduction of the University

History

The MSKJ University was established on March 2, 2010 under the Uttar Pradesh Agriculture University Act (revised) 1958 Gazette-Adhiniyam 2010 and notified vide Government Order No. 301(2)/LXXIX-V- 1-10(Ka)27-2009. The MSKJ University is a great privilege for the people of Banda in particular and of all seven districts of Bundelkhand region in general, for education, research and extension in Agriculture and allied sectors.

The University Campus

The main campus of MSKJ University is being developed on 948-acre land, situated about 6 km outside Banda on Banda- Kanpur Road on the Junction of bypass Road to Mahoba. The nearest airports are Chakeri Airport, Kanpur (about 100 km) and Chaudhari Charan Singh International Airport Amaushi, Lucknow (~200 km). The campus is 6 km away from the railway station and 5 km. from bus stand of Banda. By road, Banda is well connected to major cities like Kanpur, Lucknow, Allahabad, Jhansi, Agra, etc. It is connected through railways to New Delhi, Jhansi, Kanpur, Lucknow, Chitrakoot, and Jabalpur (Madhya Pradesh).

Mission

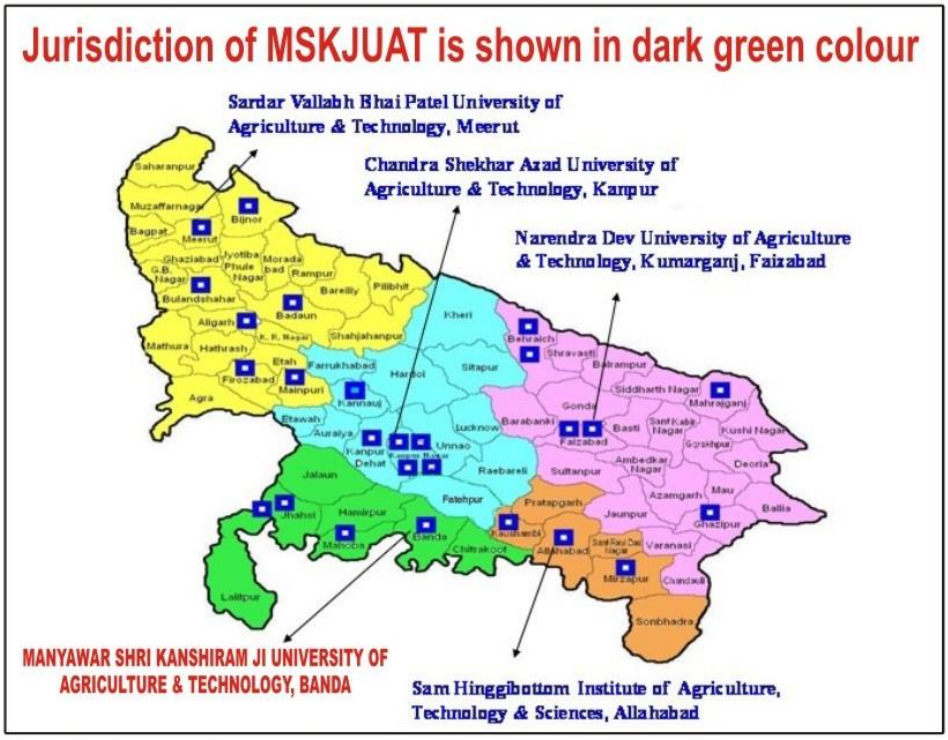
The University is committed to transform low productivity into high productivity Bundelkhand region for food and livelihoods, the cause of Indian agriculture through its quality teaching, demanddriven and location-specific research and extension programmes in the light of dynamism of socioeconomic and agro-ecological conditions, management perceptions, international trade's scenario and Government priorities.

The Jurisdiction

The jurisdictions and the command areas of four U.P. State Universities of Agriculture & Technology (Sardar Vallabh Bhai Patel University of Agriculture & Technology, Meerut; Chandra Shekhar Azad University of Agriculture & Technology, Kanpur; Narendra Dev University of Agriculture & Technology, Kumarganj, Faizabad; and Manyawar Shri Kanshi Ram Ji University of Agriculture & Technology, Banda), and a Deemed University (Sam Hinggibottom Institute of Agriculture, Technology & Sciences, Allahabad) is shown in the map.

The jurisdiction and command area of the MSKJ University includes the seven districts (Banda, Chitrakoot, Mahoba, Hamirpur, Jhansi, Lilitpur and Jalaun) of Chitrakoot Dham and Jhansi divisions of Bundelkhand region of U.P. The major responsibilities of the University includes Education, Research and Extension Activities for Development of Agriculture & Allied sectors. This will lead to human resource development, assessment and refinement & perfection of technologies, and their dissemination to the farmers in order to enhance socio-economic status of Bundelkhand region. The

Bundelkhand is, in general, an under-developed and low productive region.



2. Administration

The University highest Administrative body is the Board of management (BOM). The BOM controls the finance and assets of the institution, is the appointing authority for all teachers and gives overall guidance on the running of the University. As nearly as may be one third of the members of the BOM shall retired every year. The following shall be the members of the BOM.

1	Vice Chancellor & Chairperson of BOM	Chairperson
2	Principal Secretary Agriculture Education & Research Department, U.P.	Member
3	Secretary, Higher Education Department, U.P.	Member
4	Principal Secretary, Finance Department, U.P.	Member
5	Director of Agriculture	Member
6	Director of Animal Husbandry	Member
7	Representative of Indian Council of Agricultural Research	Member
8	Two Members of Legislative Assembly	Member
9	One member of Legislative Council	Member
10	Five Members nominated by the state government being respectively	Member

	i	An eminent Agricultural Scientist member	Member
	ii	A progressive Former	Member
	iii	A distinguished Industrialist of manufacture having special knowledge of or practical experience in Agricultural development	Member
	iv	A livestock Breeder	Member
	v	An outstanding Women social worker	Member
11		One member of Legislative Council, nominated by Speaker of Vidhan Parisad	Member
12		Comptroller shall be ex-officio Secretary of the Board	Member

Vice Chancellor

The Vice-Chancellor is the Chief Executive of the University appointed for a term of three years. The Vice-Chancellor has the power to administer the University as an autonomous body. This position is held by a person of great administrative experience, scientific bent of mind and one who could draw confidence of large number of scientists and has a high standing in the society so that his/her very association with University earns it exalted reorganization.

Academic Council

The Academic Council shall consist of the Dean of the Colleges, Director Extension, the head of the Departments and two members from each of the category of professors/Associate Professors/Assistant Professors from each faculty in rotation in order of seniority for a period of two years and one person elected by the board of each faculty of the University out of the members of the faculty. Academic Council considers, develops and approves all matters related to Academics.

Registrar

Registrar shall be responsible for the due custody of the records and the common seal of the University. He/she will be ex-officio secretary of the Academic Council, and shall be bound to place before it all such information as may be necessary for the transaction of business. He/she shall receive applications for entrance of University and shall keep a permanent record of all courses, curricula and other information as deemed necessary. Registrar shall be responsible for the conduct of examinations as prescribed and make all other arrangements necessary therefore and be responsible for the due execution of all processes connected therewith. The Registrar shall perform such other duties as may be prescribed and required from time to time by the Board.

ACADEMIC REGULATIONS

Approved by Academic Council vide Agenda No. 02/04 in its 2nd meeting held on 22nd February 2014

CHAPTER 1

REGULATIONS ON MEETING OF THE BOARD OF MANAGEMENT

1.1 Notice of not less than 14 days for a regular meeting of the Board of Management shall be given by the Secretary of the Board, to all members.

1.2 Agenda for the Meeting shall be drawn up by the Secretary of the Board and finalized with the approval of the Kulpati. Agenda with connected papers shall be sent to the members at least three days.

1.3 The quorum for any meeting whether regular or special, shall consist of at least 4 members. Provided, however, that if a meeting is adjourned for want of quorum. No quorum shall be required for the adjourned meeting.

1.4 No business shall be transacted at an adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place. Provided that the Vice-Chancellor may, bring before an adjourned meeting any matter which in his opinion, requires urgent attention.

1.5 Any member of the Board desirous of moving a resolution or of placing any special subject, not included in the circulated agenda, shall give notice of not less than 10 days of his intention to do so. Such proposal or resolution need only be considered only at an ordinary meeting and not in special meetings.

1.6 With the approval of the Vice-Chancellor, it shall be competent for Secretary of the Board of Management, to place before the board such papers concerning any matter of confidential nature or of urgency, without previously including in the agenda.

1.7 All agenda items and papers circulated there to among the members shall be treated as confidential and shall not be made accessible to others.

1.8 In arriving at decisions, the Board shall, as far as possible, aim at maintaining unanimity. But where difference of opinion exists, the matter shall be decided by simple majority votes of the members present and voting. On putting any matter to vote, the Chairman of the meeting shall call for an indication of the opinion of the members, by show of hands, first in the affirmative and then in negative and shall declare the result accordingly. The Chairman at a meeting shall be entitled to vote and in case of equality of votes, he shall have a casting vote.

1.9 The minutes of each meeting of the Board shall contain the subject matter of each item discussed together with the decision of the Board thereon. The arguments advanced for and against an issue shall not go into the records nor will the discussions in the Board be reproduced in the Board be reproduced in the proceedings.

1.10 Any point of order raised at a meeting shall be decided by the Chairman and his decision shall be final.

1.11 A member of the Board shall be entitled to submit note of dissent. Such note of dissent should be addressed to the Chairman with a copy to the Secretary of the Board.

1.12 The proceedings of a meeting of the Board shall be recorded in brief by the Secretary during the deliberations of the meeting. They should be finally prepared in consultations with the Vice-Chancellor and got approved by him. Copies of the same shall be sent to the members for information. Note of dissent if any, given by a member shall be appended to the proceedings of the meeting of the Board. The proceeding so sent to the members shall also come up before the next meeting of the Board for confirmation.

1.13 Matters once decided upon shall not be re-opened without the permission of the Chairman.

1.14 All proceedings of the Board except those of extremely confidential nature, may be printed an copies of the printed proceedings may also be sent to the members of the Board.

1.15 It shall be matter of convention that in all matters where a decision has been arrived at, such a decision shall be binding on all members of the Board whatsoever their personal opinion might have been.

1.16 It shall be one of the honourable obligations of the members not to allow outside canvassing for or against an issue before the same has been discussed in the Board.

1.17 The committees constituted under Clause (h) of Section 10(7) may include, in addition to such number of members as the Board may appoint from amongst themselves, persons who are not otherwise members of the Board, whose association and advice will be helpful for the proper discharge of the functions so assigned.

1.18 All decisions of the committees shall be placed before the Board for consideration and such decision, as the Board may deem proper.

1.19 On circulation of the proceedings to the members of the Board, actions will be taken as per the decisions of the Board without waiting for confirmation of the proceedings at the next ordinary meeting of the Board of Management.

CHAPTER 2

REGULATIONS ON FORMATION, FUNCTIONS AND CONDUCT OF MEETINGS OF ACADEMIC COUNCIL

2.1 FORMATION OF ACADEMIC COUNCIL

2.1.1 The Academic Council shall consist of the Deans of the Colleges, Director Research, Director Extension, The Heads of Department, all Professors and two members from each of the categories of Associate Professors and Assistant Professors from each faculty in rotation in order of seniority for a period of two years and one person elected by the Board of each faculty of the University out of the members of the faculty. The term of member elected by the Board of each faculty shall be one year. Membership on any standing committee of the Academic Council shall be open to a member of a faculty and will carry with it the privileges of the floor of the Academic Council including that of voting, so long as such membership continues.

2.1.2 The following Officers of the University shall be ex-officio members of the Academic Council:

2.1.2.1 Comptroller.

2.1.2.2 Dean of Student Welfare (DSW).

2.1.2.3 Director, Training & Placement, Director Administration and Monitoring, Librarian; and such other Officers as may be recommended by Academic Council and approved by the Board of Management.

2.1.3 The Vice Chancellor shall be the Chairperson and will preside over the meetings of Academic Council. In his/her absence or inability to preside, this function shall be exercised by one of the Deans nominated by the Vice Chancellor.

2.1.4 Registrar shall be the Secretary of Academic Council.

2.2 FUNCTIONS OF ACADEMIC COUNCIL

2.2.1 The Academic Council shall hold at least four regular meetings during the Academic Year on dates to be fixed by it. Special meetings of the Academic Council may be called at any time by the Vice Chancellor.

2.2.2 A special meeting of the Academic Council shall also be convened upon written requisition of one-third of the membership of the Academic Council and delivered to the Secretary of the Academic Council. Such meeting is to occur not later than ten calendar days after receipt of such requisition by the Secretary, unless the requisition designate a later date, which shall be the date of the special meeting. Written notice of regular meetings shall be sent to all members at least five days before the date of meeting. Written notice of special meeting with a list of the subjects to be considered shall be sent to all members at least three days before the meeting. Only subjects specifically listed in the notice, of a special meeting may be considered in the

meeting. A Quorum for any regular or special meeting of the Academic Council shall consist of one-third of the total membership of the Academic Council.

2.2.3 Except as otherwise provided in the Statutes, the Academic Council shall determine:

2.2.3.1 Requirements for admission to the constituent colleges and other teaching divisions.

2.2.3.2 Questions of education policy.

2.2.3.3 Relations between colleges and other teaching divisions.

2.2.3.4 Changes in the amount, character or quality of work required for admission to the colleges and other teaching divisions.

2.2.3.5 The degree and diploma which shall be awarded and the conditions for their award.

2.2.4 The Academic Council shall elect/nominate a University Disciplinary Committee on students' discipline, which may appoint one or more College Disciplinary Committees.

2.2.5 The Academic Council shall recommend candidates for diploma, degrees and certificates to be conferred by the Vice Chancellor.

2.2.6 The Academic Council shall recommend the establishment, amalgamation, division or abolition of faculties or departments.

2.2.7 All new line of work involving general education policy shall be established upon the approval of the Academic Council except as otherwise provided in the Statutes.

2.2.8 The Academic Council shall elect annually by ballot or other method from its membership the Committee on Educational Policy and the Library and such other standing committees as it may authorize from time to time.

2.2.9 The Academic Council shall develop/modify rules for University Library, Hostel, Educational tours, etc.

2.2.10 Any other matter related to Academics with the permission of Chairperson/Vice Chancellor.

2.3 THE CONDUCT OF MEETING OF THE ACADEMIC COUNCIL

2.3.1 The Secretary of Academic Council (Registrar) shall issue notice for holding the meeting of the Council on such date/time/place as the Council had decided in the preceding meeting or on a date, which may be fixed by the Chairperson of the Academic Council inviting list of items for the meeting.

2.3.2 Copies of agenda notes shall be supplied by the faculty/department concerned, duly signed, at least 21 days in advance of the date of the meeting to the Secretary, Academic Council. Every item must be received with a detailed agenda note regarding different aspects of the item; the earlier decisions and the existing Regulations on the subject; the impact, if any, of the proposed changes on existing programmes/courses; and a concrete suggestion or draft of the resolution for approval at the end of the agenda note. No item should be taken up for discussion in

the Academic Council without a proper agenda note. The items received without proper agenda note would be returned to the person concerned by the Secretary, Academic Council. The agenda notes shall be carefully screened by the Dean, Director/HOD concerned before they are sent to the Secretary.

2.3.3 No agenda item(s) received beyond the date as prescribed in Regulation 2.3.2 above shall be included in the agenda unless specifically permitted by the Vice Chancellor for doing so under special circumstances.

2.3.4 It shall be obligatory for each member of the Academic Council to attend the meeting, if he/she is available at the Campus on the date of meeting. Members, who are unable to attend the meeting because of a class at the time or for some other unavoidable reasons, shall inform the Secretary about the same, preferably before the meeting. Normally, only a bonafide member of the Academic Council shall be allowed to attend the meeting of the Council. However, any other person who may not be a member of the Academic Council may, by general or specific order, be allowed/invited by the Secretary of the Council to attend the meeting(s) with the prior permission of the Chairperson (Vice Chancellor).

2.3.5 A mention about the presence/absence of the members with or without intimation shall be made in the minutes of the meeting concerned.

2.3.6 Items for discussion in the meeting may originate from or with the permission of the Chairperson of the Board of Faculties, the Standing Committees of the Council or on a reference/direction of the Board of Management or by an Individual Member with prior permission of the Chairperson.

2.3.7 The agenda and notice for any regular meeting shall be circulated by the Secretary, Academic Council so as to reach the members at least 5 days before the day of meeting. The agenda and notice for an emergency meeting must normally be issued three days before the meeting. However, decisions taken in an emergency meeting with less notice will not be invalidated because of inadequacy of notice.

2.3.8 A copy of the minutes of each meeting shall be supplied to the members. Copies of the minutes shall also be sent to the Library for the information of students and staff, provided that the Council, through a special resolution decides that minutes of a particular meeting may not be sent to the Library.

2.3.9 Follow-up action on the decisions of a meeting shall be taken by Dean/Directors/Faculty Secretary/Sub-Committees and a report about the action taken shall be forwarded to the Secretary, Academic Council, at least 10 days in advance for reporting the same to the Council at the next meeting.

2.3.10 Agenda notes once circulated shall not be circulated again and the members are expected to retain those agenda notes till they are considered by the Academic Council.

2.3.11 On all matters not specifically provided for in these Regulations 2.3.1 to 2.3.10 about the conduct of meeting of the Academic Council, the decision of the Vice Chancellor shall be final.

2.3.12 An item not included in the agenda may be placed before the Council for consideration under the item with permission of the Chairperson.

2.3.13 Any point of order raised at a meeting shall be decided by Chairperson and his/her decision shall be final.

2.3.14 Matters once decided upon shall not be re-opened without the permission of the Chairperson.

CHAPTER 3

REGULATIONS ON ADMISSION, ENROLMENT AND CONTINUANCE OF STUDENTS

3.1 GENERAL REGULATIONS ON ADMISSION

3.1.1 Date of Enforcement

These Regulations shall come into effect from the date of this resolution.

3.1.2 Extent of Application

These Regulations shall apply to students (a) on the rolls (b) seeking admission and (c) admitted to the University hereafter.

3.1.3 Interpretation

Subject to such advice as may be given by the Chancellor, the decision of the Vice Chancellor shall be final and no suit, application, petition revision or appeal shall lie in a court of law or any authority outside the University in respect of interpretation of these Regulations.

3.2 ADMISSION PROCEDURE AND ADMISSION RULES

3.2.1 Combined Agriculture and Technology Entrance Test (UP-CATET)

Combined Agriculture and Technology Entrance Test (UP-CATET) will be conducted by one of four University i.e. SVPUAT, Meerut, CSAUAT, Kanpur, NDUAT, Faizabad and MSKJUAT, Banda on rotational year in the 1st/2nd week of May as per Uttar Pradesh Krishi Evam Prodyogik Vishwavidyalaya (Dwitiya Sanshodhan) Adhiniyam, 2006 (Uttar Pradesh Adhiniyam Sankhya 16 of 2006) as passed by the Uttar Pradesh Legislature and assented to by the Governor on May 23, 2006.

NOTE 1:- Only Uttar Pradesh State Domicile candidates are eligible for appearing in all courses.

NOTE 2:- All rules developed/amended by UP-CATET Committee from time to time shall be applicable in the University. All admission rules are subject to change as per conditions laid down each year for UP-CATET.

3.2.2 Academic Year

3.2.2.1 The Academic Year shall be normally from July to June unless otherwise required under special situations.

3.2.2.2 The Academic Year shall be divided into two academic terms known as Semesters. The minimum duration of each semester will have 110 days consisting of 95 instructional days and 15 Examination days.

3.2.2.3 Specific dates for advisement, registration of students, and commencement of instruction and Semester final Examination for each Semester shall be fixed by the Registrar in advance.

3.2.3 Time of Admission

Admission to each degree programme, except for sponsored/ICAR candidates or Fellowship holders in various Postgraduate degree programme, shall be made in the Semester of the ensuing year only. However, admissions to various Ph.D. degree programmes shall be made in first and/or second Semester as decided by the Academic Council every year in advance.

3.2.4 Number of Seats

The number of students to be admitted each year to the various academic programmes shall be fixed in advance by the Academic Council.

3.2.5 Age Limit

Minimum age limit for admission to B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture programmes shall be 16 and maximum age shall be 22 years as on 31 December of the ensuing year (Relaxation in maximum age for SC/ST/OBC categories will be five years), subject to change as per conditions laid down each year for UP-CATET.

3.2.6 Medical Fitness

Admission shall be subject to the candidate's being declared medically and physically fit by the Medical Officer designated for this purpose by the Vice Chancellor.

3.2.7 Verification of Antecedents of Students

Each applicant for admission to his/her University shall be required to submit a Character Certificate from the Head of the Institution last attended certifying the following points among others:

3.2.7.1 That the applicant has not taken any part in any activity subversive of the Rules, Regulations and Discipline of the Institution.

3.2.7.2 That the applicant has never used unfair means in any Examination of the Institution.

In case any applicant has taken part in any of the above two activities, the details of the same shall be recorded by the Head of the Institution last attended and in that event such candidate shall not be eligible for admission.

NOTE:- It may very carefully be noted by the candidate that no student who has been punished at any time in his/her earlier academic career for having taken part in the activities of indiscipline or who has ever used unfair means in any of the Examination of the Institution last attended by him/her shall not be eligible for admission to this University. In case he/she secured admission by concealment of any of the facts on these points or through the oversight or the clerical error in the Admission cell/Registrar's Office, the admission shall be liable to be cancelled as and when this is detected and the University shall not be responsible for any adverse effect of this cancellation.

3.2.8 Programmes and Minimum Educational Eligibility

UNDER GRADUATE PROGRAMMES

3.2.8.1 B.Sc. (Hons) Agriculture - Intermediate in Agri. Sci./PCB/PCM/PCMB

3.2.8.2 B.Sc. (Hons) Horticulture - Intermediate in Agri. Sci./PCB/PCM/PCMB

3.2.9 Refusal of Admission

3.1.9.1 The Vice Chancellor reserves the right of refusing the admission to any candidate, even though he/she may fulfill the academic requirements for admission on the basis of the criteria laid down in this Regulation, for reasons to be recorded in writing, whose admission, in the opinion of the Vice Chancellor, shall not be in the best interest of the University. The decision of the Vice Chancellor shall be final.

3.1.9.2 The students who have been permanently dropped or temporarily dismissed from this University either on account of poor academic performance or on account of acts of indiscipline or those who have been debarred from seeking admission in this University shall not be allowed to appear in the entrance Examination or seek admission as a sponsored/nominated candidate. If such a candidate appears in the entrance Examination by concealing the facts or due to oversight on the part of Admission Cell, the candidature of such a candidate shall be rejected.

3.1.9.3 The candidates found using unfair means in the entrance Examination of his/her University shall be rejected and further such candidates shall also be debarred from appearing in the entrance Examination of the University in future.

3.1.9.4 It is the responsibility of the candidate to furnish full and correct information on the application form. Any admission made on the basis of wrong or concealed information supplied by the candidate or due to any oversight or error in the Admission Cell and detected subsequent to the admission or joining of the candidate, would be cancelled at the cost and risk of the candidate.

3.2.10 Reservation of Seats for Admission

The number of seats to be reserved for admission to the various programmes will be determined by the Rules of U.P. State Government.

3.2.11 Submission of Documents

3.2.11.1 In order to register himself/herself as a student of the University, a candidate finally selected for admission to a particular course, at the time of admission has to:

(i) Pay necessary fees as may be prescribed or required for the purpose.

(ii) Submit transfer certificate from the institution last attended.

(iii) Submit transfer certificate or eligibility certificate as the case may be from the University from which he/she came along with all other documents as may be required for the purpose; Provided, however, that student passing Intermediate Examination from the Board of High School & Intermediate Education, U.P. and joining the University directly, need not submit any migration or eligibility certificate.

(iv) Certificate of physical fitness from the Medical Officer of the University.

3.2.11.2 A candidate, who for any reason, cannot submit all or any documents required under Regulation 3.2.11.1, may be admitted and registered provisionally on payment of necessary fees subject to an undertaking to submit necessary documents within a stipulated period failing which the admission will be cancelled and all money paid will be forfeited.

3.2.11.3 No student who is admitted or registered provisionally under Regulation 3.1.11.2 and who has not submitted required documents within the stipulated period shall not ordinarily be entitled to obtain his/her Student Performance Report of the final Examination of the Semester, till he/she submits the documents.

3.2.11.4 The documents and certificates required by the University and submitted by the student for admission and registration shall be the records of the University and they will not be returned, even temporarily, to the student concerned under any circumstances.

3.2.12 Registered/Enrolled Identity Number

The Identity Number issued to students by the University Administration shall be his/her of Registered/Enrolled number during the course of study under the University.

3.2.13 Cancellation of Admission

In case a candidate, to whom a seat is offered, does not join within the time given, his/her admission would stand cancelled and the seat would be offered to the person next on the merit list.

3.3 ENROLMENT (REGISTRATION)

3.3.1 Advisement

3.3.1.1 Students freshly admitted as well as continuing students shall present themselves in the beginning of each Semester on dates notified by the Registrar for advisement and shall be assigned in groups to staff advisors (i) by the Dean concerned at the Undergraduate level and (ii) by the Head of the Department, in which the student is majoring, at the Postgraduate level.

3.3.1.2 The Advisor shall help the Undergraduate students in planning the programme of their studies and the choice of courses. He/she shall also

guide the student in determining the credit load, which he/she can safely and conveniently carry in each Semester and shall advise him/her regarding adding of or withdrawal from the courses during a Semester. Each Advisor shall maintain a close contact with his/her Advisees and keep himself/herself informed of their progress. Problem cases in need of special measures shall be brought to the notice of the Dean concerned by the Advisor.

3.3.1.3 Advisor should have the contact number (Landline/Cell phone) of his/her Advisees as well as address and contact number of parents/guardian of his/her Advisees and should be in regular contact with their Advisees and his/her parents.

3.3.2 Registration

3.3.2.1 Following advisement as prescribed above, registration of candidates selected for admission as well as that of continuing students shall be completed on scheduled date(s) notified earlier by the Registrar for each Semester.

3.3.2.2 Normally, a student shall not be permitted to register for course unless he/she has cleared its pre-requisite course. In case any student has failed in a pre-requisite course after attending the course at least for 15 weeks, the Dean concerned may permit him/her to register for advance course. In case of genuine difficulties, the Dean of the College concerned may also permit offering of pre-requisite course and the advance course to which it was pre-requisite concurrently.

3.3.3 Mode of Registration

Registration shall consist of the following steps:

3.3.3.1 Payment of the University fees and other dues to the Comptroller and the Dean/DSW.

3.3.3.2 Enrolment of the students in various courses with individual Instructor at a particular place, date and time.

3.3.3.3 Submission of the prescribed registration cards/forms duly filled-in and signed by the Advisor, Instructors and other Officers concerned to the Registrar.

3.3.4 Registration of Fresh Students

Registration for the first Semester of the first year of a degree programme is a part of admission procedure and shall be governed by the admission Rules. Admission of new students failing to register in the prescribed manner on the appointed date is liable to be cancelled and the seats so fallen vacant shall be offered to the next candidates in the waiting list. In the event of a newly admitted student being permitted by the Vice Chancellor to register late, he/she shall pay late registration fee as prescribed under Regulation 3.3.6.1 for continuing students, unless exempted by the Vice Chancellor.

3.3.5 Registration of Continuing Students

Registration of continuing students in the subsequent Semester shall be held in a similar way on the date and time notified by the Registrar.

3.3.6 Late Registration Fee

3.3.6.1 A continuing student who does not register on the day of registration, shall be required to pay a late registration fee of Rs. 200/- for the first day and Rs. 50/- for each subsequent day, till the registration is completed as prescribed.

3.3.6.2 Any student may be exempted from the payment of late registration fee by the Vice Chancellor where he/she is convinced that the student is late for circumstances beyond his/her control.

3.3.7 Last Day of Registration

The registration of continuing students shall not be permitted later than ten working days from the scheduled date of registration in each Semester unless allowed by the Vice Chancellor with late registration fee mentioned in Regulation 3.3.6.1. No student shall be permitted after expiry of 15 working days from date of registration under any circumstances.

3.3.8 Summarily Cancellation of Registration

The Vice Chancellor may summarily cancel the registration of any student or group/batch/classes of students who indulge(s) in acts of indiscipline, misconduct, violation of Rules and Regulations of the University, strikes and absents from class(es) without permission or without any valid reason or in which case, the Vice Chancellor has reasons to believe that their continuance in the University would not be in the best interest of the University.

3.3.9 Suspension of Registration

The registration of a student may also be suspended by the Vice Chancellor or the Dean of the College concerned or the DSW either at his/her discretion or on the recommendations of the Disciplinary Committee, pending enquiry or the receipt of a report from the Warden or a faculty member alleging that the student concerned has committed an act of indiscipline as defined under the Regulations. A student whose registration has been suspended as above may also be ordered to vacate the hostel and leave the Campus if such a measure is deemed necessary by the authority passing the order of suspension in the interest of academic discipline and peace on the Campus.

The period of suspension under this Regulation shall not exceed 15 days except in cases in which the Vice Chancellor or the Dean has reasons to believe that the proceedings in the Disciplinary Committee cannot be concluded during this period or where it is felt that the enquiry by the Disciplinary Committee needs to be held in abeyance so as not to prejudice the proceedings in court cases involving the alleged commission of a serious crime or an offence under the laws of the Country or the State involving moral turpitude.

3.3.10 Registration Necessary for Award of Degree

In case a student studies a course without registering in the prescribed manner, he/she will not be awarded any Credit in that course.

3.3.11 Minimum Credit Load

3.3.11.1 The following shall be minimum credit requirements for registration in each Semester.

Undergraduate Students:	12 Credits
Postgraduate Students: (including Teaching/Research Assistantship)	12 Credits

NOTE:-If a student is left with less than 12 credits in his/her approved programme, above limit will not operate.

3.3.11.2 *Exceptions:* The Dean concerned may permit a lower credit load, on the following grounds to be specifically recorded in each case:

(i) Marginal adjustment.

(ii) Unavoidable clashes in Time Table.

(iii) Non-availability of sufficient number of courses to be covered.

(iv) Non-availability of suitable course or failure to clear pre-requisites or for other reasons.

(v) Need for taking up preparatory courses.

(vi) In case of Postgraduate students, completion of course requirement and being left with only credits for research.

3.3.12 Maximum Credit Load

3.3.12.1 The following shall be the maximum credit load to be allowed by an Advisor:

(i) Undergraduate: 22 credits in a Semester (excluding credits for NSS, Work Programme, NCC, NSO, Games, Sports and New Education/Liberal Education courses, etc.).

(ii) Full time Postgraduate (with Teaching/Research Assistantship): 16 Credits in Semester.

(iii) An Advisor may permit an Undergraduate student to take up a maximum of 24 credits in a particular Semester on either of the following grounds:

(a) The OCPA of the student at the end of the preceding Semester was not less than 7.50 and he/she has also not been placed on Academic Probation for the instant Semester.

(b) The CPA of the student in each of the preceding two Semesters was not less than 7.50 and his/her OCPA at the end of preceding Semester was less than 6.00.

(iv) In genuine cases, an Advisor may also permit a marginal adjustment up to one (01) credit over the credit load prescribed in Regulation 3.3.12.1 above.

3.3.12.2 *Exceptions:* The Dean concerned may permit an increase in the maximum credit load (as specified above) up to the limits detailed below on any of the grounds listed in Regulation 3.3.12.3 below.

(i) Undergraduate students : 28 credits

(ii) Full time Postgraduate students : 20 credits

3.3.12.3 The grounds for increase in maximum credit load up to the limits laid down in 3.3.12.2 above shall be as follows, but they shall not operate in case of students on Academic Probation.

(i) Where extra departmental or extra non-credit courses are deemed necessary.

(ii) Where a course is not offered in the subsequent Semesters within the time frame laid down for the maximum duration of the course.

(iii) Where only thesis requirements are left to be completed.

(iv) Where four or less credits remain to be covered in the subsequent Semester.

(v) Last Semester of the degree programme.

3.3.12.4 Any increase beyond the limits prescribed in 3.3.12.2 above, or on grounds other than those listed in 3.3.12.3 above, may be permitted by the Vice Chancellor on the recommendation of the Dean concerned for reasons to be recorded.

3.3.13 Maximum Class Strength

3.3.13.1 No unscheduled course shall be offered except with the specific permission of the Dean, which should be communicated to all concerned including the Registrar unless the number of students offering that course is 5 in the case of Undergraduate course(s).

3.3.13.2 In genuine cases where the number of students below the number prescribed in 3.3.13.1 above, the requirement of minimum class strength may be waived by the Dean concerned.

3.3.14 Record of Class Attendance

Each Instructor shall maintain a record of the students' attendance in each course taught by him/her in each Semester in a register prescribed by the Registrar.

All Postgraduate students (both Master's and Ph.D. programmes) during the course of their registration for thesis research only shall regularly sign on the register maintained in the Advisor/HOD office, as decided by the Department. Further, any student leaving for his/her personal work outside the University shall have to take permission from the Advisor, HOD and Dean of the college concerned.

3.3.15 Minimum Class Attendance

3.3.15.1 Each student shall be regular in attending classes and shall be required to have a minimum of 85% attendance in each course in each Semester, failing which he/she shall be awarded failure grade in that course unless withdrawal from the course is permitted.

3.3.15.2 The percentage of attendance of a student in a course in a Semester shall be computed on the basis of the total number of lectures, practicals and tutorials attended by him/her and those actually held between the date of commencement of instructions and the date of closing of instructions, irrespective of the date of registration or the duration of leave granted to him/her provided that attendance in respect of the students representing the University in games and sports, debates etc. outside the Campus shall be calculated after ignoring the period which they spend outside the Campus on due authorization by the Dean of the College concerned and DSW subject to the condition that such authorized absence should normally not exceed 7 days in a Semester and further that no condonation even under this Regulation shall be allowed below 75% attendance.

3.3.15.3

(i) All the Instructors shall calculate the shortage of attendance of students below 85% to the date of Mid-term Examination, get it noted from the concerned students during Mid-term Examination, and send its copy to the Dean through HOD.

(ii) Also all the Instructors shall display on the College Notice Board(s) the shortage of attendance of the students (below 85%) in particular course one week before the start of the final Semester Examinations with a copy to the Dean concerned. The student will submit the application for condonation of shortage to the office of the Dean concerned through Instructor/Advisor within a week of the start of Semester final Examinations. No application for the condonation of shortage in attendance will be entertained under any circumstances after prescribed date mentioned above.

(iii) All formalities towards condonation of shortage in attendance must be completed prior to the commencement of Semester final Examination.

3.3.15.4

(i) The Dean concerned may, on the recommendation of the Instructor/Advisor, condone shortage in attendance up to 5% in a course(s) in exceptional circumstances and allow students with an attendance of 80% or more to appear in the final Examinations.

(ii) The Vice Chancellor may, on the recommendation of Instructor/ Advisor/Dean concerned condone shortage in attendance up to 10% in a

course(s) in exceptional circumstances and allow students with an attendance of 75% or more to appear in the final Examinations.

3.3.15.5

(i) No teacher shall leave the University Campus without making alternative arrangement for his/her class.

(ii) The attendance must be taken whenever class is scheduled whether any student attends or not, not-withstanding.

(iii) The monitoring about holding of the scheduled classes will be done by the Head of the Department and Dean concerned.

(iv) Reports about defaulters must be promptly submitted and action taken.

(v) The provision of the Regulations regarding attendance shall be strictly adhered to.

NOTE 1:- In computation of percentage of attendance, fractions of 0.5 or above shall be counted as 1.

NOTE 2:- If student is required to repeat a course but he/she has obtained exemption for attending theory class as per Regulation 3.4.10.1 then the requirements of 85% attendance will not apply in his/her case.

NOTE 3:-Whenever students resort to mass absence from classes, a fine of Rs. 30/- per student per day may be levied from all such students. All such students will have to pay this fine before the final Examination of the same semester and failure to do so shall render them liable to be debarred from appearing in the Examination.

3.3.16 Leave for Illness

In case of unavoidable absence from the class e.g., serious illness, the student shall apply for leave to the Dean of the College concerned through his/her Hostel Warden, on the prescribed form. The Dean of the College concerned, if satisfied, may permit him/her such leave and shall inform all the Instructors and Heads of Department concerned. In such cases, efforts should be made to make up the work missed by the students.

3.3.17 Addition/Withdrawal of Course(s)

3.3.17.1 A student who desires to add/withdraw course(s) from the original registration has to complete the following steps failing which the addition/withdrawal will not be allowed under any circumstances:

(i) The application is made on the prescribed proforma obtainable from the office of the Dean concerned.

OFFICE OF THE COORDINATOR (TEACHING)

Manyawar Shri Kanshiram Ji University of Agriculture & Technology, Banda – 210001 (U.P.)
Proforma for course addition/withdrawal by the students

Name…… Semester……Year……

I.D. No……..... Name of Degree……

Total No. of Credits Offered……... O.C.P.A.……

Batch……..... C.P.A……

The U.G. students shall not be permitted to withdraw the non-credit courses offered as per their course curriculum. Application for addition of course must reach in Coordinator (Teaching) office within six (06) working days from the scheduled date of registration after the recommendation of Advisor and Instructor on payment of prescribed fee per course. Credit load of the student does not exceed the prescribed maximum credit limit in Academic Regulation.

However, in genuine cases, the application may be submitted to the Hon'ble Vice Chancellor through Coordinator (Teaching)/Registrar up to 15 working days from scheduled date of registration on payment of prescribed fee.

Addition of course (s)

Name & Number of course	Cr.hr.	Section	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Instructors Recommendation

Application must reach within 04 weeks in case of prolonged illness duly certified by the medical Officer of the university up to six weeks.

Withdrawal of Course(s):

Name & Number of course	Cr.hr.	Section	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Instructors Recommendation

Reason for adding or withdrawal of course(s).

Total credit offer after adding or withdrawal from the course(s)

Signature of the Student

Advisor comments With Recommendation **Recommended** **Approved** **Charge of Fee Paid**

Advisor **Coordinator (Teaching)** **Registrar** **Comptroller**

(ii) The recommendations of all concerned are obtained in person.

(iii) The approval/recommendation of Dean concerned is obtained.

(iv) The form is submitted in the office of the Registrar in person after payment of necessary fee of Rs. 50/-per course within the prescribed time limit.

(v) The orders are obtained from the office of the Registrar supplied to the Advisor and Instructor(s) concerned within the prescribed time limit.

3.3.17.2 The Course withdrawn within the prescribed period and manner stated above shall not be shown on the transcript.

3.3.17.3

(i) A student may be allowed to add a course(s) in original registration up to 6 working days from the scheduled date of registration by the Dean concerned on the recommendation of Advisor and Instructor(s) on payment of fee of Rs. 50/-per course with the condition that the credit load of the student does not exceed the prescribed maximum credit limit. However, in genuine cases, the Vice Chancellor may permit addition of course(s) up to 15 working days from the scheduled date of registration on payment of fee as prescribed above.

(ii) A student may be permitted to withdraw from a course within 4 weeks from scheduled date of registration in the Semester by the Dean concerned on the recommendation of Advisor and Instructor(s) concerned on payment of fee of Rs. 50/-per course. In case of prolonged illness, duly certified by the Medical Officer of the University, a student may be permitted to withdraw from a course worth up to 4 credits, up to six weeks by the Vice Chancellor on the recommendation of Advisor, Instructor(s) and Dean concerned, subject to the following conditions:

(a) The credit load after withdrawal does not fall below 12 credits for undergraduate and Master's students and 10 credits for Ph.D. students.

(b) If the credit loads of a student as at 3.3.17.3 clause (ii) (a) falls below 12 credits, the student will not be entitled for Graduate Assistantship.

(c) If the credit loads does not fall below 9 credit in UG and 4 credits in PG Programme for in-service students under full time study programme.

3.3.17.4 The first year Undergraduate students shall not be permitted to withdraw from the non-credit (Remedial) courses of English, Mathematics, Physics, Chemistry and Agriculture.

3.3.18 Auditing the Course(s)

A student may be permitted to audit course(s) offered in a Semester by the Dean concerned on the recommendation of the Advisor. The student shall have to attend at least 75% classes and have to secure at least 50% marks in various Examinations conducted in the course(s) to get the course recorded in the transcript as an audit course.

NOTE:- In a situation where the course first announced and offered but could not be run, the registration of the course is to be either cancelled by the Dean, and the Advisor should ensure that withdrawal of the course is permitted within the prescribed period.

3.4 CONTINUANCE OF STUDENTS

3.4.1 Withdrawal from the University

3.4.1.1 Every enrolled student shall be required to register at the beginning of each Semester till the completion of his/her degree requirements, unless otherwise permitted/ordered by the Dean/Vice Chancellor, as the case may be, failing which his/her enrolment shall be cancelled. Re-admission in such case shall be by petition, and not as a matter of right.

3.4.1.2 Permission to withdraw from the University, for a Semester shall not be granted unless the application is made through the Advisor to the Dean at least 15 days before the commencement of the Semester final Examinations after obtaining up to date 'No Dues Certificate' from the Comptroller.

3.4.1.3

(i) No student will be permitted to drop the 1st Semester of his/her first year both at Undergraduate and Postgraduate level. However, the Vice Chancellor may permit the dropping of the 1st Semester of the First Year on the recommendations of the Dean of the college concerned in exceptional circumstances i.e.

(a) Hospitalization for one month or more in the 1st Semester.

(b) Confinement to bed for one month or more in the 1st Semester as a result of serious illness/ailment.

3.4.1.4 A student may be permitted to drop the 2nd Semester of his/her first year only on the condition that he/she was not placed on Academic Probation after the first Semester final Examinations. Under no circumstances, a student who was permitted to drop the 1st Semester shall be allowed to drop the 2nd Semester.

3.4.1.5 Permission to withdraw from the University for a Semester shall be accorded on the following grounds:

(i) The student is hospitalized in the University Hospital or in a Hospital, advised by the University Medical Officer Incharge or advised complete rest by the University Medical Officer Incharge or the Incharge of such Hospital to which his/her case was referred by the Medical Officer Incharge, University Hospital for a period on account of which his/her attendance is likely to fall below 75% and/or he/she is likely to miss or has missed Examination as well as make ups thereof. The application, on this ground duly countersigned by the University Medical Officer Incharge and supported by the relevant certificate(s), is to be made within a week from the last day of hospitalization. No application submitted beyond this period will be considered.

(ii) In case of an accident whereby a student has been disabled temporarily to attend his/her classes, the application for leave duly supported by the Medical Certificate(s) countersigned by the University Medical Officer Incharge, is to be put up within a week from the day the student is declared fit to attend classes.

(iii) In case where a student has left the University Campus on authorized leave on any ground including the unfortunate death of parent/guardian and falls sick there and has to undergo treatment for such a period that his/her attendance falls short of the minimum prescribed limit, he/she may also be permitted by the Dean to drop/withdraw from a Semester if he/she makes formal application to the Dean through his/her guardian/parent duly supported by Medical Certificate(s) from a MBBS/Registered Medical Practitioner residing in that area, within a fortnight from the date of expiry of the authorized leave.

(iv) Other unforeseen circumstances which, in the opinion of Vice Chancellor, are fit reasons for allowing a student to drop a Semester.

3.4.1.6 If a student has not obtained permission from the competent authority as defined above, he/she shall be awarded credits as per the actual performance in various courses by awarding zero in missed Examinations. In case his/her attendance falls short of prescribed limit, failure grades shall be awarded.

3.4.1.7 Normally, permission shall not be granted to a student to withdraw from the University for more than two Semesters under the Regulations 3.4.1.2 to 3.4.1.5.

3.4.1.8 The Vice Chancellor may, on the recommendation of the Advisor and Dean, College concerned, permit temporary discontinuance of studies for maximum period as detailed below on grounds prescribed under Regulation 3.4.1.3.

(i)	Undergraduate programme	-	2 Semesters
(ii)	Master's programme	-	3 Semesters
(iii)	Ph.D. programme	-	4 Semesters

In exceptional circumstances, where the Vice Chancellor is convinced that the duration of withdrawal beyond the limits prescribed above, has become necessary for reasons beyond student's control, he/she may, on the recommendation of the Advisor and Dean concerned, permit a student to withdraw from the University for a longer period, within the provisions of Regulation 3.4.5 of this Chapter and other Regulations.

3.4.1.9 Permission to discontinue studies may be accorded on the following grounds:-

(i) The student has to join service and extension in his/her joining date is not possible.

(ii) In case of in-service sponsored student, the sponsoring institution wants to withdraw the student for a temporary period.

(iii) In case of University in-service student, the concerned Department/Section wants to withdraw the student for temporary period in the interest of work of the Department, Section and/or University.

(iv) Any other circumstances, which in the opinion of the Vice Chancellor, is fit reason for allowing the student to discontinue his/her studies. Discontinuance of studies on the above grounds shall be permitted only if the application is made in advance, after obtaining up to date 'No Dues Certificate' from the Comptroller.

3.4.1.10

(i) No student shall be permitted to withdraw from the University for a period laid down in Regulation 3.4.1.8 above on any ground whatsoever.

(ii) In case any student wants to withdraw from the University for more than two Semesters, on medical grounds, he/she shall be advised to seek admission elsewhere or else withdraw from the University permanently and seek readmission when he/she feels completely fit to resume studies.

(iii) The case of dropping/withdrawal of a Semester in respect of such students as may have a OCPA of less than 5.50 in case of UG and OCPA of 6.50 in case of Master's and 7.25 for Ph.D. up to the end of preceding Semester, shall be referred to the Petitions' Committee disposal.

(iv) The student permitted to withdraw for one or two Semesters on medical grounds shall be required to submit a certificate of fitness from the University Medical Officer In-charge on rejoining.

3.4.2 Clearance Certificate

Any student who wants to leave the University during or after a Semester must officially withdraw by obtaining 'Clearance Certificate' on the prescribed form from all sections and Heads of Departments concerned, Registrar, Comptroller, Librarian, Hostel Warden, etc. and deposit in the office of the Registrar. A student not following this procedure shall be liable to pay the University fees and other charges

until a 'Clearance Certificate' has been filled by him/her or by somebody else on his/her behalf.

3.4.3 Procedure for Withdrawal from the University

3.4.3.1 A student may be entitled to withdraw from the University on completion of his/her studies in this University.

3.4.3.2 No student shall be deemed to have withdrawn from the University unless he/she has obtained a 'Clearance Certificate' from the Comptroller.

3.4.3.3 Unless a student has obtained a 'Clearance Certificate' from the University, no refund of the amount due to him/her shall be allowed, nor shall the transcript and any other documents be issued to him/her.

3.4.3.4 The ''Clearance Certificate' may be obtained by the student himself/herself immediately after completion of his/her degree or at the time of his/her being permitted to withdraw from the University. The 'Clearance Certificate' may also be obtained by making an application to the Comptroller on his/her behalf.

3.4.3.5 It shall be the responsibility of the Sectional Heads concerned, e.g. the Warden, the Librarian, the DSW and the Heads of Department etc. to report to the Comptroller immediately, at the end of each Semester's final Examinations, the dues, if any, outstanding against any student.

3.4.3.6 It shall be the duty of the Comptroller to prepare and maintain an up to date statement of dues outstanding against student and also to furnish a copy of the statement to the Registrar within three weeks from the date of the commencement of the Semester break for each Semester.

3.4.3.7 The Registrar shall consult the report furnished by the Comptroller and if no dues are shown against a student in the list, he/she shall issue the transcript or any other documents which can be issued to a student after withdrawal from the University.

Provided that no application for issue of document shall be held up beyond three weeks for want of a report.

3.4.4 Refund of Caution Money

The refund of caution money of a student shall be made only after he/she has obtained a 'Clearance/No Dues Certificate' from all concerned and deposited it in the office of the Registrar. The refund of caution money shall be permissible up to a period of five years from the date the student leaves the University, there after it shall be credited to the University revenue.

3.4.5 Re-admission of Students

3.4.5.1 A student, who has OCPA of 3.00 and above, shall has the right to petition for re-admission to first year of his/her UG programme. He/she may be granted re-admission against additional seats. He/she will be allotted revised ID number submission upon application through advisor. He/she will be granted exemption from those courses which he/she has cleared with minimum 5.50 credit points by the Dean concerned.

3.4.5.2 Students who withdraw from the University or who have been dropped by the University may file a petition to the Vice Chancellor for re-admission. However, on re-admission such students shall be treated as continuing students. As far as time of admission is concerned, they shall not be treated as continuing students for the purpose of fees payable.

3.4.6 Concession to Students joining Armed Forces in an Emergency

3.4.6.1 A student who has withdrawn from the University to join the Armed Forces during a period of emergency or in normal times may petition to the Vice Chancellor for re-admission. Re-admission in such case may be granted by the Vice Chancellor on the recommendations of the Dean concerned.

3.4.6.2 If the student has withdrawn from the University during the concurrence of a Semester after completing instruction for not less than 14 weeks, the Credit in the course for which he/she had registered in a Semester, shall be deferred. On re-admission he/she may be given a proficiency Examination.

3.4.6.3 The maximum duration for the degree, in case of student as in 3.4.6.1 above may at the discretion of the Vice Chancellor, be extended by the period for which he/she had been in the Armed Forces on temporary commission. This concession shall not be allowed to students having regular commission in the Armed Forces except in case of candidates who might have suffered injury in the battlefield rendering him/her of 'low medical category' or otherwise disabled in any way.

3.4.6.4 In such cases where concession has been allowed for joining Armed Forces, the graduation requirement may be adjusted in terms of the Regulations on courses of studies for degree and diploma.

3.4.7 Academic Probation

3.4.7.1 If at the end of any Semester of an Academic Year, the OCPA (CPA in case of 1st year students at the end of 1st Semester of their study) of a student falls below 5.50 but above OCPA as described in Regulation 3.4.9.3 in case of Undergraduate, 6.50 in case of Master's and 7.25 in case of Ph.D., he/she shall be placed on Academic Probation for the duration of the succeeding Semester.

3.4.7.2 **Restrictions for Student on Academic Probation:** Students on Academic Probation shall not be allowed to represent the University in functions held outside the Campus.

3.4.8 Removal of Academic Probation

If at the end of the Semester during which a student has been on Academic Probation, the OCPA of the student for that Semester is 5.50 or above in case of Undergraduate, 6.50 or above in case of Master's and 7.25 or above in case of Ph.D., he/she shall cease to be on Academic Probation.

3.4.9 Dropping from the University

3.4.9.1 If any student fails to remove the Academic Probation in accordance to the Regulation 3.4.8 he/she shall be dropped from the University for Poor Academic Performance, with the right to petition for the admission. In case a student has been permitted to drop 1st or 2nd Semester of his/her 1st Academic Year or he/she has been admitted in second Semester, his/her OCPA at the end of first two Semesters of his/her stay in the University will be counted for this purpose.

3.4.9.2 Any student failing in the same course thrice shall finally be dropped from the University. In exceptional circumstances, however, the Vice Chancellor may permit a fourth chance on the recommendation of the Advisor and Dean concerned.

3.4.9.3 Those Undergraduate students who fail to achieve the overall credit point average specified below and /or also fail to taken a minimum of 12, 24, 48 and 72 credit hours of courses at the end of one , two, four and six semester respectively shall be dropped from the University by Registrar automatically

(i) At the end of 1st semester OCPA 3.00
(ii) At the end of 2nd semester OCPA 4.50
(iii) At the end of 4th semester OCPA 5.00
(iv) At the end of 6th semester OCPA 5.25

Such students shall have the right to petition for re-admission to the first year class.
If such re-admitted students are dropped again, they shall have no-right to petition for re-admission.

3.4.10 Repetitions of Courses

3.4.10.1 If a student secures 'F' grade in a particular course, he/she may register for the same course when it is offered as regular course to the next class. The attendance in theory class for a student could be exempted, if he/she had got 'F' grade in a particular course not because of shortage of attendance and had class attendance of 85% or above. However, it will be compulsory for such students to meet attendance requirements in practical along with regular class in this repeat course. He/she will be required to appear in all

the Examinations/assignments etc. along with regular class. These courses will be designated as special/repeat courses

3.4.10.2 If a student who took a special course, again fails, he/she will have to take it subsequently whenever offered as a regular course and will have to meet all the requirements including attendance in theory and practicals as well as the Examination.

3.4.10.3 The students may be allowed to register for special courses in a semester, within the maximum prescribed limit of credit load. The students on good standing may be allowed to register for one additional special course in addition to the maximum credit load.

3.4.10.4 In order to avail the exemption of attendance in theory classes of the special/repeated courses, the students shall have to apply to the Dean concerned through Advisor within seven working days from the registration/additions of the special courses after which the request for exemption of theory classes shall not be entertained.

3.4.10.5 When a student gets grade 'F' in a course, the credit points corresponding to that course shall not count for graduation requirements. No credit point shall be awarded for a course in which he/she has obtained 'F' grade for successful completion of the degree programme.

3.4.10.6 No student shall register again in course which he/she has already cleared with a passing grade. If he/she registers again a course already passed, subsequent grade shall be ignored.

3.4.11 Cancellation of Studentship of in-service students of the University

3.4.11.1 The studentship of an employee of the University shall cease *ipso facto* if he/she ceases to be in the employment of the University.

3.4.11.2 Such an employee shall have the privilege of petitioning to the Vice Chancellor for re-admission as full-time regular student.

3.4.11.3 No such employee shall be given re-admission if:

(i) He had been dismissed from the University services.

(ii) He had been convicted by a court of law for any criminal offence involving moral turpitude.

(iii) Whose re-admission, in the opinion of the Vice Chancellor, will not be in the interest of discipline in the University.

3.4.11.4 In case of his/her re-admission, he/she shall be liable to pay the University fees like other full-time regular student.

3.4.11.5 He/she shall be treated as any other student of the University and shall have to abide by the Rules and Regulations, etc. which may be in force from time to time.

3.4.12 Disposal of Petitions for Re-admission

The petitions of dropped students for re-admission shall be examined by a Petition Committee appointed by the Vice Chancellor. The committee shall advise the Vice Chancellor in respect of each petition whether it may be rejected or accepted, subject to such conditions as the Committee may deem fit. In case a student has to take make-up Examination (s), his/her performance for the purpose of dropping shall be judged on the basis of the results already available without waiting for the make-up Examination. The decision of the Vice Chancellor in such cases shall be final. The Petition Committee constituted above shall also decide the complicated cases of make-up Examinations not strictly covered in the Regulations, referred to it by the Deans of the Colleges, and make necessary recommendations. On the basis of the recommendations of the Petition Committee, necessary decision may be taken by the Dean of the College concerned.

3.4.13 Repeating Courses in order to fulfill the Minimum Requirement for UG Degree Programme

A student getting 5.00 to 5.49 credit points in a course may repeat that course with the prior permission of the Dean subject to the following conditions:

3.4.13.1 The repetition shall be allowed only once.

3.4.13.2 The repetition shall be permitted only to enable the student to fulfill the minimum credit point average requirement and not for the improvement of his/her credit point average or for enabling him/her to qualify for the award of a scholarship/fellowship or for competing for a Certificate of Merit or for a position in the University.

3.4.13.3 When a student repeats a course after getting grade 'F' or if permitted to repeat a course after getting 5.00 to 5.49 credit points, as the case may be, credits corresponding to that course shall be counted only once for the graduation requirements.

3.4.13.4 A student on Academic Probation will be allowed to repeat a course only once and revised credit points shall be mentioned if there is improvement in the credit points, otherwise the original credit points shall stand. But in the official record of the student maintained in the Registrar's office, both the earlier and the credit points obtained after repetition improved or otherwise, shall be mentioned and the fact that he/she repeated the course shall be indicated by the letter "r" written above the credit points which he/she obtained after such repetition. But till such time as the student repeats the course, the original credit points and credits shall be used to compute the overall credit point average.

If a student, even after repeating a course with 5.00 to 5.49 credit points and after having studied as the courses prescribed for the given programme, does not obtain an OCPA of 5.50, he/she be allowed to repeat the other course(s) in which he/she has obtained 5.00 to 5.49 credit points till he/she obtains OCPA of 5.50 to complete his/her degree requirement subject to maximum limit of twelve semesters.

3.4.14 Breach of Discipline and Punishment(s) there of

3.4.14.1 The following shall constitute 'acts of indiscipline':

(i) Keeping, carrying, using or supplying of any fire arms, lethal weapons, knife with a blade of more than four inches length in the room or outside.

(ii) Keeping, using or supplying intoxicants in any form.

(iii) Gambling in any form.

(iv) Ragging, bullying or harassing of student(s).

(v) Demonstration in any form including procession and meeting.

(vi) Strike or hunger strike.

(vii) Boycotting of any University function, programme or activity preventing any student from attending classes, functions, programme or any other activity of the University.

(viii) Abusing.

(ix) Recourse of violence, assault, intimidation, rioting.

(x) Showing or causing to show any disrespect to a teacher or Officer or any misbehaviour or intimidation of an employee of the University.

(xi) Incitement to commit any act of indiscipline.

(xii) Any breach of law of the country or the state or the Statute, Regulations, Rules of the University or orders of a competent authority.

(xiii) Disturbing other students in their studies.

(xiv) Damaging any University property.

(xv) Disorderly behaviour in any form.

(xvi) Attending or organizing unauthorized meetings and participation in such meetings.

(xvii) Displaying notices, leaflets or posters not signed or countersigned by the Warden or other University Officers authorized by the Vice Chancellor at the hostels and University Notice Boards or other places or distributing such notices or leaflets or disfiguring or defacing or writing slogans and undesirable things on the building, property, etc.

(xviii) Any act specifically forbidden by the Warden, Chief Warden, DSW or any Officer of the University.

(xix) Any other act intended or calculated to cause inconvenience, annoyance, injury or damage to any other inmate of the hostel, employee of the University or resident of the Campus or guest visitors to the University.

3.4.14.2 **Punishment for Indiscipline**

(i) Any inmate who violates any Regulation or otherwise indulges in any act of indiscipline as defined from time to time may be fined up to Rs. 500/- by the Warden/Incharge of the hostel/Instructor, if the Warden/Instructor is satisfied that the fine is adequate punishment for the act of indiscipline.

(ii) Cases of indiscipline, which in the opinion of the Warden/Instructor are so serious that a fine of Rs. 500/-or less would not be sufficient punishment, shall be referred by the Warden to the Chief Warden/Dean of the College concerned for taking disciplinary action against the inmate(s).

(iii) The Chief Warden/Dean on the recommendation of the Disciplinary Board of his/her college may award any of the following punishments:-

(a) **Fine up to Rs. 3000/-:** This shall be noted on the inmate's permanent record card but shall not go out on the transcript.

(b) **Placing the inmate on 'Conduct Probation' on the recommendation of College Disciplinary Board:** This will consist of an official warning to the students that one more incident of indiscipline might lead to the dismissal of the student from the University. It shall be noted on the inmate's permanent record card and shall go out on the transcript of the student so long as the student is on such probation.

(c) **Reprimand of Record:** This shall consist of an official warning to the student not to repeat any act of indiscipline. This will be noted on student's permanent record card but not on any outgoing transcript.

(iv) Cases of more serious indiscipline in respect of which the Chief Warden/Dean is satisfied that the foregoing punishment as above, would not be adequate to meet the ends of justice and call for more severe punishment or cases involving students of more than one college/hostel, shall be referred to the Disciplinary Committee by the Chief Warden or any other Officer of the University coming across any acts of indiscipline to the Secretary of the Disciplinary Committee.

(v) The recommendations of the Disciplinary Committee shall be forwarded to the Vice Chancellor as expeditiously as possible.

(vi) The Vice Chancellor after considering the recommendations of the Disciplinary Committee may award any one or more of the following punishments:

(a) Monetary Fine

(b) **Collective or Group Fine**: May be imposed on a group of students, as a whole, when the Vice Chancellor, on the recommendation of the Disciplinary Committee, is of the opinion that it is not possible to fix the responsibility on individual member of the group for any act of indiscipline.

(c) **Reprimand on Record**: This shall consist of an official warning to the student not to repeat any act of indiscipline. This will be noted on student's permanent record card but not on any out-going transcript.

(d) **Conduct Probation**: This shall consist of an official warning that one more incident of indiscipline might lead to the dismissal of the student from the University. It shall be noted on the permanent record card and shall go out on the transcript so long as the student is on Conduct Probation.

(e) **Temporary Dismissal**: The student shall be dismissed from the University for a specific Semester(s) and required to leave the University Campus immediately. This will be entered on the permanent record card and shall go out in transcript of the student if the same is issued during the period of temporary dismissal. It shall, however, not be mentioned in the outgoing transcript, in case the transcript is issued after re-admission. However, he/she shall be debarred from admission to the University for any further Programme.

(f) **Permanent Dismissal/Rustication from University**: The student shall be dismissed permanently from the University and shall be required to leave the University immediately. The punishment shall be entered in the permanent record card and transcript of the student and he/she shall be debarred from admission to the University for any further Programme.

3.4.14.3 **Suspended Dismissal**

(i) If student has been getting the punishment of temporary dismissal for one or more Semesters and he/she has only two Semesters or less to complete his/her degree, then the punishment of temporary dismissal may be suspended on compassionate ground and he/she may be placed on 'Conduct Probation' by the Vice Chancellor to enable him/her to complete his/her degree on his/her moving an application duly countersigned by his/her parent/guardian and filling in a bond of good behaviour with such conditions as may be imposed for the remaining period of his/her stay in the University.

(ii) In the case of permanent dismissal, if a student has completed at least two Semesters satisfactorily in this University prior to being giving the punishment of permanent dismissal may be suspended on compassionate grounds and the student may be re-admitted on bond with such conditions as may be imposed of good behaviour under this Regulation.

(iii) Re-admission through suspension of punishment shall invariably be subject to the following conditions:

(a) The student concerned may be re-admitted not as a matter of right but only on compassionate ground on the submission of an unconditional apology.

(b) The student concerned will remain on Conduct Probation during the remaining period of his/her stay in the University.

(c) The student concerned will fill up a bond of good behaviour as prescribed, duly countersigned by his/her parent/guardian which would remain operative for the entire period of his/her stay in the University.

(d) He/she will not apply nor will be entitled to admission to any new degree programme in the University.

(e) If the student concerned has been permanently dismissed, he/she may be considered to apply for relief under this Regulation only after expiry of three Semesters from the date of issue of orders of punishment but in no case will be entitled to re-admission before the expiry of less than four Semesters from the effective date of punishment.

(f) No student shall be eligible for seeking relief under this Regulation unless he/she has completed at least 2 Semesters satisfactorily in this University prior to his/her being given the punishment of permanent dismissal.

(g) No student shall be eligible to seek or be granted relief under this Regulation if he/she commits any act of indiscipline in the University Campus or misbehaves with any Officer or teacher of the University within the Campus or outside during the period laid down in Regulation 3.4.14.3 clause (iii) (e).

(iv) Before granting the extraordinary concession of suspension of the permanent or temporary dismissal, the Vice Chancellor may follow any procedure that he/she considers appropriate in order to ascertain as to whether the student applying for the same is likely to abide by the Rules and Regulations of the University and is not likely to indulge himself/herself or instigate others to indulge in violation of the Rules and Regulations. During the period of suspension of permanent/temporary dismissal, the daily attendance of the student concerned shall be taken by the Warden/Assistant Warden of the hostel and it shall be obligatory for him/her to present himself/herself before either of them when called upon to do so.

(v) The Vice Chancellor may revoke the order of suspension of punishment on his/her own initiative or on the receipt of a report from the Chief Warden/Dean of the College concerned/DSW/Registrar to effect that the student concerned has violated conditions of the bond which will in

addition to any other specific conditions, may be enforced at Vice Chancellor's discretion, invariably require the student not to:

(a) Absent himself/herself from the hostel for two or more days consecutively without prior permission of the Warden/Chief Warden.

(b) Boycott or absent himself/herself from any Examination without prior permission.

(c) Fall below 75% in attendance in class in any of the course offered by him/her.

(d) Fail to present himself/herself before his/her Advisor, and/or Warden/Chief Warden despite having been asked to do so.

(e) Commit any act of indiscipline as defined.

(f) Fail to maintain a OCPA of 5.50 in the case of Undergraduate, 6.50 in the case of Master's and 7.25 in case of Ph.D. degree programme.

(vi) However, while the benefit of this Regulation may be available to cases of indiscipline where the punishment of temporary or permanent dismissal has been given for the first time, it is hereby laid down that (i) the suspension of temporary dismissal may be given to student only once during his/her stay in the University, (ii) if the orders of suspension of punishment of permanent dismissal have been revoked by the Vice Chancellor on his/her own or on receipt of a report from the Chief Warden/Dean of the College concerned/DSW/Registrar to the effect that the student concerned has violated the conditions of the bond or other conditions imposed upon him/her at the time of re-admission, then such a student may apply for the review of revocation order only after the expiry of four Semesters from the date of issue of revocation orders of suspended dismissal and may be re-admitted on bond with such conditions as may be imposed of good behaviour under the Regulations and this re-admission, through review of revocation order of permanent dismissal shall invariably be subject to the same conditions as imposed earlier. In case such a student violates any conditions of the bond or other conditions imposed by the Vice Chancellor or involve in any act of indiscipline, then the student shall be permanently dismissed with no right to appeal for re-admission.

(vii) The Regulations shall also not apply in case a student is given the punishment of temporary dismissal for copying or to any student who is given the punishment of temporary or permanent dismissal and who after having been debarred from entering the Campus is reported to be seen entering the Campus without specific permission of the Vice Chancellor. If a student indulges in any act of indiscipline after completing the graduation requirement and or after obtaining the Provisional Degree Certificate, in such cases an F.I.R. will invariably be lodged with the

police and his/her character certificate will be issued only after the final decision.

(viii) The Advisor of the student concerned, and Hostel Warden concerned may also be invited by the College Disciplinary Board/Disciplinary Committee while enquiring into a disciplinary case.

(ix)

(a) *Temporary Dismissal:* The fact of punishment of temporary dismissal or suspended dismissal during the period of temporary dismissal shall be recorded on the permanent record card and shall be mentioned in the outgoing transcript until the punishment has been revoked and the student is re-admitted. It shall, however, not be mentioned in the outgoing transcript after re-admission of the student. However, if any prospective employer or institution etc. request for details about the student concerned, the punishment given to the student shall normally be intimated to them only after obtaining the orders of the Vice Chancellor on the desirability or otherwise of giving such information to the party concerned.

(b) Students who were given the punishment of 'dismissal', may at the discretion of the Vice Chancellor, be re-admitted after the expiry of the period of punishment on the recommendation of the Dean concerned and the Disciplinary Committee on such conditions as may be prescribed in this behalf. No student will, however, be entitled to re-admission as a matter of right.

(x) *Permanent Dismissal:* The fact of punishment of permanent dismissal or suspended dismissal shall be recorded in the permanent record card and shall be mentioned in the outgoing transcript, unless the Sub-Committee to be constituted as per the procedure laid down under Regulations 3.4.15.3 clause (iii), recommended otherwise.

3.4.15 Procedure for the Removal of Conduct Probation

3.4.15.1 The Dean of the College concerned may remove a student from the Conduct Probation on the recommendation of the Advisor, Warden and if necessary of College Disciplinary Board in case he/she was not involved in acts of indiscipline more than once under the following conditions:

(i) If the student was placed on Conduct Probation by the Dean/Chief Warden on the recommendation of the College Disciplinary Board.

(ii) If the student was placed on Conduct Probation by the Vice Chancellor and has completed the graduation requirements.

3.4.15.2 The Vice Chancellor may remove a student from the Conduct Probation on the recommendation of the Disciplinary Committee under the following situations:

(i) If the student was placed on Conduct Probation by the Vice Chancellor on the recommendation of the Disciplinary Committee.

(ii) If the student was placed on Conduct Probation either by the Dean/Chief Warden or by the Vice Chancellor and was involved in acts of indiscipline more than once.

3.4.15.3 The procedure for removal of Conduct Probation for the students temporarily dismissed or permanently dismissed but re-admitted shall be as under:

(i) The Conduct Probation of students, temporarily dismissed once and for one Semester may be removed by the Vice Chancellor on the recommendations of the Disciplinary Committee.

(ii) The Conduct Probation of students permanently dismissed but re-admitted may be removed by the Academic Council on the recommendation of the Committee constituted by the Council.

(iii) The Conduct Probation of students temporarily dismissed more than once for two Semesters or more may be removed by the Academic Council on the recommendation of the Disciplinary Committee.

NOTE:- The constitution of Academic Council's Sub-committee for removal of Conduct Probation and issuance of documents with good conduct or otherwise in case of permanently dismissed students will be as per the following procedure:

"If a student who was given the punishment of permanent dismissal but was subsequently allowed relief, wishes that he/she shall be given a clean record of conduct, may apply for the same after the completion of his/her degree. On receipt of such an application, a committee would be constituted by the Academic Council on whose recommendation it would be decided as to whether or not the fact of permanent dismissal would be recorded on the outgoing transcript and if a satisfactory character certificate should be issued to him. This committee would be constituted in a meeting of the Academic Council and shall consist of 7 members of the Academic Council to be selected randomly either with the help of a computer or through table of random members. This committee may follow such procedure as it may deem necessary and may also consider the reports of the Advisor, Warden, Head of the Department and Dean of the College concerned or of any other person whose views the Committee may deem relevant."

3.4.16 Issue of Character Certificate to various Categories of Students

3.4.16.1 Character Certificate with good conduct as well as the prescribed two-point Character Certificate shall be issued to all students who are not punished at any time during the period of their studentship as well as to those who are given the punishment of

(i) Reprimand of record/warning,

(ii) Monetary fine and

(iii) Conduct Probation, provided the Conduct Probation has been removed at the time of issuing the certificate.

3.4.16.2 The two-point Character Certificate shall not be issued to the following categories of students:

(i) All students given the punishment of permanent dismissal, rustication or temporary dismissal for any length of time, even after their re-admission.

(ii) All students who were found guilty of using unfair means in any Examination at any time during their stay in the University.

(iii) Character Certificate with satisfactory conduct may be issued to the students who are given the punishment of temporary dismissal only once during period of their stay in the University if the same is recommended by the Disciplinary Committee and approved by the Academic Council.

3.4.16.3 Character Certificate with satisfactory conduct may be issued to the students who have been given (i) punishment of temporary dismissal more than once or (ii) punishment of permanent dismissal/rustication if they are allowed re-admission under Regulation 3.4.16.3 only after the recommendation of the Committee constituted by the Academic Council as defined in the Note for Regulation 3.4.15.3.

The Sub-Committee of the Academic Council may collect information from various sources like Advisors, Deans concerned, Wardens, Security Officer and the Disciplinary Committee before making their recommendations about the issue of Character Certificate to such students.

3.4.17 Refusal of Admission to Students against whom Cases in the Court(s) were pending

No student who is involved as an accused in a case involving a cognizable offence or who has been convicted of such an offence or of an offence involving moral turpitude shall be admitted to any degree programme in the University.

CHAPTER 4

REGULATIONS ON THE CONDUCT OF EXAMINATIONS, EVALUATIONS AND GRADING

4.1 DATE OF ENFORCEMENT

These Regulations shall come into force with effect from the date of its resolution i.e. 06th January, 2012.

4.2 EXTENT OF APPLICATION

These Regulations shall apply to all the students already on the rolls of the University as well as those seeking admission to the University or admitted to the University hereafter.

4.3 INTERPRETATION

Subject to such advice as may be given by the Chancellor, the decision of the Vice Chancellor about the interpretation of any Regulation(s) shall be final and no suit, application, petition, revision or appeal shall lie in a court of law or any other authority outside the University in respect of interpretation of these Regulations.

4.4 CONDUCT OF EXAMINATIONS

4.4.1 Types of Examinations

The Examinations shall be of the following types:

4.4.1.1 Pre-final Examinations.

(i) Mid-term Examination

(ii) Practical/lab/viva-voice

(iii) Assignment

4.4.1.2 Semester final Examinations

4.4.1.3 Other Examinations :

(i) Preliminary Examinations

(ii) Make-up Examinations

(iii) Any other type of Examinations as may be prescribed by the Academic Council from time to time.

4.4.2 Examination and Evaluation System

4.4.2.1 The weightage given to different Examinations of different types of courses will be as follows:

Examinations	Course without Practical	Course with Practical	Course with Practical only
Mid-term	20%	20%	-
Assignment	10%	-	20%
Practical	-	30%	80%
Final	70%	50%	-

4.4.2.2 In addition, the Instructor in-charge of a particular course may hold a number of different kinds of tests during the Semester.

4.4.2.3 The Mid-term Examination shall be generally of one hour and shall be held nearly in the middle of a Semester. The date of holding this Examination shall be announced by the Instructor in advance. It consists of objective questions of 8 marks and subjective questions of 12 marks. The midterm examination and practical examination shall be conducted by the Course Instructor and evaluation shall be done by the concerned Instructor and/or other teachers assigned by the Competent Authority.

4.4.2.4 There shall be no written Semester final Examination in purely laboratory type course and courses of special type like PCP, Project, Seminar, Special Problem, Clinical Practice, NSS and the like. For such courses, distribution of marks will be decided by the Instructor with the approval of HOD. No change in the distribution of marks would be permissible without prior approval of the HOD.

4.4.2.5 For External Examination System, the final theory question paper shall be of 70% marks for the courses without practical classes and 50% marks for the courses with practical classes for both B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture Degree Programmes.

4.4.3 Final Lab/Practical/Viva-voce Examinations

All final practical & Viva-voce Examinations shall be finished one week before the commencement of Semester Final Examinations. The make-up of Final Lab./Practical/Viva-voce shall be completed before the start of Semester final Examinations subject to Regulations on make-up for final Examinations.

4.4.4 Semester Final Theory Examinations

4.4.4.1 The Semester final Examination shall be held on the dates notified by the Registrar.

4.4.4.2 The educational tours may be organized in such a way that it should not disturb the academic programme, i.e. advisement, registration and Examination. To utilize the full tour money, students can be paid halting allowance if the funds permit.

The Deans/Directors should fix such tours in Semester Break or during the summer vacation.

4.4.4.3 The academic programme must always get preference over any programme including extra-curricular activities, tours etc.

4.4.5 External Examination System

As per the recommendations of Fourth Deans' Committee of ICAR, the External Examination System has been adapted is in the University for both B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture Degree Programmes. For this purpose, Procedure, Format of Question Paper and Remuneration to External Examiners are as under.

4.4.5.1 **Procedure**

(i) For each course offered in a semester, either fresh or repeat, question paper for final theory examination shall be set up by External Examiner.

(ii) List of External Examiners (along with their address, contact no.) to set up question papers for final theory examination, from other Agricultural Universities, State Universities/Central Universities and ICAR Institutes shall be prepared by the Coordinator (Teaching) after consultation from the faculty members of concerned department. The list shall be got approved from the Hon'ble Vice Chancellor. This list shall be updated from time to time.

(iii) From the above approved list of External Examiners, Coordinator (Teaching)/Dean of concerned College shall select the names of Examiners of various courses offered in a semester after the one month of commencement of that semester. Coordinator (Teaching) shall send invitation letter for appointment of examiner along with format of the question paper and syllabus of the course to the appointed examiners to set up question paper (Two sets for each course) and also to evaluate answer books of the course.

(iv) The two sets of question paper shall be marked as 'Set A' and 'Set B' respectively. The 'Set A' shall only be opened for conduct examination. The 'Set B" shall be used in case of any leakage or any other problem.

(v) External Examiner after setting question paper shall send sealed envelops containing hard and soft copies (CD) of question papers along with answer key of the objective questions in the sealed envelope to the Coordinator (Teaching).

(vi) In case the question sent by the External Examiner is hand written, it shall be typed in the Coordinator (Teaching) office for Final Examination and the typed question paper shall kept in the custody of Coordinator (Teaching).

(vii) In case the question paper from External Examiner is not received until one week prior to the commencement of final examination of the semester or due to any other exigency, the paper for final theory examination can got set up by the teachers of the concerned department with the approval of competent authority.

(viii) One day before of examination day, the typed question paper shall be opened by the Coordinator (Teaching)/Examination Superintendent and a teacher from the concerned discipline.

(ix) In case any question or part of a question in the question paper is out of prescribed syllabus, the same can be modified as per syllabus on the recommendation of Coordinator (Teaching).

(x) The final question paper after incorporation of corrections, modifications or moderations, shall be multiplied and sealed (Objective paper and Subjective paper separately) in the presence of the Coordinator (Teaching) office and shall be sent to the Examination Hall 15 minutes prior to the commencement of examination of concerned subject.

(xi) Immediately after the completion of examination, all the answer books shall be collected and sealed by the Examination Superintendent in the Examination Cell and the sealed envelopes/packets of answer books shall be kept in the Examination Cell under the supervision of Examination Superintendent.

(xii) The Coordinator (Teaching) shall contact with the appointed External Examiner for evaluation of the answer books at the earliest possible time.

(xiii) External Examiners shall evaluate answer books and prepare the award lists in the Examination Cell.

(xiv) After evaluation, a final list of total marks external and internal (Midterm, Practical, Assignment) shall be got prepared by the Coordinator. Then the Result sheet, separately for each course, shall be prepared.

(xv) From the final list, Performance Report Card of the students shall be prepared in Coordinator (Teaching) office and shall be issued to students by the Registrar office.

NOTE :- Academic Council decided that at the initial stage only question paper shall be set up by the External Examiners whereas the evaluation of the answer books will be done by the Course Instructor(s)/teacher(s) of the concerned department in the University by keeping regulations 4.4.5.1 (xii) and (xiii) in abeyance till further decision.

4.4.5.2 The Format of final theory examination for the courses without practical and courses with practical are given below.

(i) **Model Question paper of final theory examination for the courses without Practical**

Two Parts, Part-1 (Objective paper -- 30 marks) Part-2 (Descriptive part -- 40 marks)

Code No……

(Not to be filled by Candidates)

Part-1 (Objective Part)

Student Id. No. ……

Sig. of Invigilator ……..

Name of Course	**:**	……	**Section I**	**:**	**(Objective Paper)**
Course No.	**:**	……	**MM**	**:**	**30 Marks**
Degree Programme	**:**	……	**Time**	**:**	**30 Min.**
Semester	**:**	……			

Note:- Attempt all question as per the instructions given below.
Answer of question no. 1 to 3 must be written in the space provided against each question in question paper. Answer of question nos. 4, 5 and 6 should be written in the answer booklet provided by the University.

Q.1 Fill in the blanks: **10x1=10**

(i) to (x)

Q.2 Choose the correct answer and write the choice 1 or 2 or 3 or 4 in the space given against each sub-question: **10x1=10**
(i) to (x)

…….....

(1) (2)

(3) (4)

Q.3 Match the column B with A and right the appropriate alphabets in the table given below: **10x1=10.0**

	A		B	
(i) to (x)			(a) to (j)	

A	**(i)**	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**	**(vii)**	**(viii)**	**(ix)**	**(x)**
B										

Part-2 (Descriptive Part)

Student Id. No. ……..

Sig. of Invigilator ……..

Name of Course	:	……	**Section II**	:	(Descriptive Paper)
Course No.	:	……	**MM**	:	40
Degree programme	:	……	**Time**	:	2:00 hrs
Semester	:	……			

Q.4 Attempt any 5 out of following. Answer of each question should be in 2-3 lines. **5x2=10**
(i) to (viii)

Q.5 Answer any 5 out of following. Answer of each question should be in 6-8 lines. **5x3=15**
(i) to (viii)

Q.6 Answer any 3 out of following. Answer of each question should be in 1-2 pages **3x5=15**
(i) to (v)

(ii) **Model Question paper for final theory examination for the courses with Practical**
Two Parts, Part-1 (Objective paper --20 marks) Part-2 (Descriptive part -- 30 marks)

Part-1 (Objective Part)

Code No……

(Not to be filled by Candidates)

Student Id. No. ……

Sig. of Invigilator ……..

Name of Course	**:**	……	**Section I**	**:**	**(Objective Paper)**
Course No.	**:**	……	**MM**	**:**	**20**
Degree Programme	**:**	……	**Time**	**:**	**30 Min.**
Semester	**:**	……			

Note:- Attempt all question as per the instructions given below.
Answer of question no. 1 to 3 must be written in the space provided against each question in question paper. Answer of question nos. 4, 5 and 6 should be written in the answer booklet provided to you by the University.

Q.1 Fill in the blanks: **05x01=05.0**

(i) to (v)

Q.2 Choose the correct answer and write the choice 1 or 2 or 3 or 4 in the space given against each sub-question: **10x01=10.0**
(i) to (x)…….....

(1) (2)

(3) (4)

Q.3 Match the column B with A and right the appropriate alphabets in the table given below the matching: 10x0.5=5.0

	A		**B**	
(i) to (x)			(a) to (j)	

A	**(i)**	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**	**(vii)**	**(viii)**	**(ix)**	**(x)**
B										

Part-2 (Descriptive part)

Student Id. No. ……..

Sig. of Invigilator ……..

Name of Course	:	……	**Section I**	:	**(Descriptive Paper)**
Course No.	:	……	**MM**	:	**30**
Degree programme	:	……	**Time**	:	**02 Hrs.**
Semester	:	……			

Q.4 Attempt any 5 out of following. Answer of each question should be in 2-3 lines. **5x2=10**
(i) to (viii)

Q.5 Answer any 4 out of following. Answer of each question should be in 6-8 lines. **4x3=12**
(i) to (viii)

Q.6 Answer any 2 questions out of the following 3 question. Answer of each question should be in 1-2 pages **2x4=08**
(i) to (iv)

4.4.5.3 **Remuneration to External Examiners**

Academic Council decided that the Remuneration for setting up question papers will be Rs. 1200 per Question Paper of a course (two sets). The Remuneration for marking answer books will be Rs. 20 per Answer book with the minimum of Rs. 500 per Course to External Examiner. In addition, actual registered post/speed post charges for mailing of Question Paper will be paid to External Examiner. For this purpose, the Remuneration Bill Form to be submitted by the External Examiner is given below.

The External Examiner invited for marking Answer books will be eligible for Travelling Allowance as per University rules.

REMUNERATION BILL FORM

Name (In block letters) …….

Address……

……

……

Name of course with code no…….

Name of Examination: Final Examination……..Semester 20…….-20……

	Particulars	**Amount**		
		No.	Rate	Total
1.	Remuneration for setting of a question paper (Two sets for each course) ……....@ Rs. 1200/- per course.			
2.	Remuneration for answer books @ Rs. 20/- per answer books (minimum Rs. 500/-)			
3.	Postage/Speed Post charges (Actual)			

Total:……

Amount in words: Rupees…….

Affix Revenue Stamp

Received payment by Paper Setter and entry made in the respective register
On page No…….as per University rules.

Received Payment

Accountant **Examination Assistant**

Passed for payment of Rs……Rupees…….only.

Coordinator (Teaching)

4.4.6 Adjustment of Dates of Examinations

In the event of any break-down or dislocation of the normally academic functioning of the University for whatever reasons, the dates specified as above for pre-final and other Examination shall be suitably adjusted by the Dean of the College concerned.

4.4.7 Preparation of Examination Schedule

The final Examination schedule shall be prepared by the Registrar and notified to the students and staff ten days before the commencement of the Examination.

The final Examinations once fixed shall not be postponed and nobody should issue orders for such postponement and that would be scheduled during the period of Examinations.

4.4.8 Seating Arrangement

The Examination shall be conducted in all the colleges for which arrangement shall be made by the Registrar. As far as possible, the students of a college shall be allotted Examination Halls in the same college.

The students shall be seated strictly according to the seating plan. Invigilators and the Examination Superintendents shall enforce this and the Invigilators Incharge shall be supplied with a copy of the seating arrangement chart in each room.

Refusal of a student to occupy the seat allotted to him/her in the seating plan shall be construed as an attempt to use unfair means.

4.4.9 Supply of Examination Material

Examination material, such as answer-books, twine, drawing papers, log tables, graph paper etc. will be supplied by the Registrar.

4.4.10 Duration of Examination

Courses having less than 3 credits shall have the final Examination of at least one hour and those having 3 credits or more, 2 hours or more.

4.4.11 Appearing in the Final Examination

Candidates, who come late by more than 30 minutes in any Examination, shall not be allowed to appear in that Examination and no examinee shall be allowed to go out of the Examination Hall during the first 30 minutes.

4.4.12 Make up Examinations

4.4.12.1 *Pre-final Examinations:* Out of Pre-Exams, student will be allowed to make-up for any one of the Examination missed by him/her by the Instructor himself/herself. Under no circumstance a make-up for more than one Examination would be permissible irrespective of the reasons. The make-up Examination in lieu of the missed pre-final Examination shall be administered in the 15^{th} week of the Semester. No make-up of these make up Examinations shall under any circumstances be permissible.

4.4.12.2 *Final Lab Practical/Viva-voce Examinations:* Make-up of the final lab practical/Viva-voce Examinations missed by a student shall be completed before the announcement of the Semester final Examinations. This make-up will be allowed by the Dean of the College as per Regulation for Semester final make-up. No make-up of the final lab/Viva-voce Examinations will be admissible after the commencement of the Semester Final Examinations.

4.4.12.3 *Final Examinations:* Normally no make-up shall be permissible in lieu of the missed final Examination(s). However, under special circumstances, make-up Examination may be permitted at the discretion of the Dean of the College concerned subject to such directions as may be issued by the Vice Chancellor from time to time on any one or more grounds such as:

(i) Hospitalization of the student for a period of 72 hours in Govt. Hospital or as per reference of the Medical Officer Incharge of the University.

(ii) No exemption may be allowed for the diseases for which no clinical Examination is possible. In other words, headache, abdomen pain, giddiness, etc. shall not be regarded as sufficient justification for make-up Examination.

(iii) Death of parent(s).

(iv) Attending interview (for final year students, i.e. if his/her degree is to be completed within next Semester only).

(v) Attendance in court case(s).

(vi) Participation in National Level Competitions, Debates, Sports & Games etc. organized by various central agencies.

NOTE:-Question Paper for Semester Final Make-up Examination shall be prepared in accordance with the provisions made under 4.4.5 above titled "Guidelines for preparation of Question Paper for Semester Final Examinations/Semester Final Make-up Examinations".

4.4.12.4 *Procedure for obtaining the make-up Examination*

(i) If a student failed to appear at any Semester final Examination for reasons beyond his/her control, he/she must file an application on the very day on which the Examination is missed.

(ii) The application for make-up Examination must be supported with medical certificate and medical Examination report and should be routed through the Hostel Warden/Advisor/Dean concerned.

(iii) No application for make-up Examination shall be considered if received after 72 hours from the expiry of the last date of the Semester final Examination.

(iv) The application for exemption should be submitted on the date of commencement of sickness itself. The student should be examined by the Advisor/Warden and Chief Warden, besides the Medical Officer.

(v) Exemption should be granted only if the Chief Warden certifies that he/she has himself/herself seen the student and found him/her in a state of sickness to justify the exemption and that the student has been admitted to the hospital.

(vi) The make-up Examinations would be held immediately after regular Examination as per schedule notified by the Dean of the College concerned.

4.4.13 Instructions for Paper Setter, Instructors and Invigilators

4.4.13.1 Normally no staff member shall be assigned to teach a course, conduct of Examination, evaluation, invigilation (in the particular Examination) etc. where his/her immediate blood relation may be a student.

4.4.13.2 All the paper setters shall reach the college, at least half-an-hour before the commencement of the Examination concerned, in which their Examination has been fixed along with the question papers, There shall be sufficient extra papers for each room to meet any emergency.

4.4.13.3 In case any instructor goes on leave during the final Examinations, pre-final Examinations, make-up Examinations or lab final Examinations, he/she should be responsible to make necessary arrangements to hold these Examinations on scheduled dates and time.

4.4.13.4 In each college, one room will be earmarked as Examination Cell where the Examination material shall be available.

4.4.13.5 All Invigilators shall come to the Examination Hall at least 15 minutes before the commencement of the Examination. The Examination Halls shall be opened 15 minutes before the start of Examination in the presence of the Instructor Incharge.

4.4.13.6 All the Invigilators will check in each room the identity cards of all the students in their Examination rooms to verify their identity.

4.4.13.7 A blank answer book marked ‘A’ shall be provided to each student in the first instance. Students demanding additional answer book shall be provided with blank answer book marked ‘B’.

4.4.13.8 Invigilator Incharge shall take attendance of the students 20 minutes after the commencement of each Examination on the attendance sheet to be provided and in the manner required by the Registrar.

4.4.13.9 After taking attendance, the Invigilators shall check and see that the balance of question papers left after tallying with the attendance.

4.4.13.10 At the end of the Examination, answer books shall be collected from all the students by the Invigilators. The Invigilator Incharge shall deposit

blank answer books, etc. in the Examination Cell immediately after the Examination is over and deliver filled-up answer books to the Instructor concerned directly.

4.4.13.11 The Invigilator shall allow only those students in the Examination Hall as are mentioned in the room chart of the Examination Hall. In case of omission of the name of any student from the chart, the Invigilator Incharge may exercise his/her own discretion and notify the fact to the Registrar immediately.

4.4.13.12 Invigilator finding any student resorting to unfair means in the Examination or creating disturbance or acting in any manner so as to cause any inconvenience to other students in the Examination Hall, shall report the matter at once to the Registrar and the Dean concerned for suitable action.

4.4.14 Examination Superintendent

The Dean of College or his/her nominees shall act as Superintendent of Examination for the respective College and shall be responsible for the proper conduct of supervision of the Examinations.

4.4.15 Flying Squad

To make surprise inspections at various Examination centers during the Semester final Examination, a flying squad consisting of 2 to 4 Professors belonging to other faculties may be constituted by the Registrar. The name of Professor will be obtained from the Dean of the College. The flying Squad will be expected to make inspection of observance of Regulations of Conducted Examinations and will submit report to the Vice Chancellor with copies to the Dean of the College concerned and Registrar immediately after the final Examinations are over.

4.4.16 Multiplying or Photocopying of Question Papers

4.4.16.1 All the clerks assigned the work of Multiplying/photocopying shall remain with the Instructors till the commencement of the Examination. The teachers may, however, type out their own question papers, if they know typing.

4.4.16.2 One room in each college shall be earmarked as Confidential Room for Examination purposes and typing and photocopying work will be done in that room.

4.4.16.3 Typing and Photocopying work shall be taken a day before the start of each Examination in the presence of the Instructor concerned in the confidential room earmarked for the purpose.

4.5 EVALUATION AND GRADING

4.5.1 Preparation of Final Examination Results

4.5.1.1 Each Instructor shall prepare four copies of Instructor's Result slips (Grade Reports) in the Performa prescribed by the Registrar giving the academic performance of the student in this course.

INSTRUCTOR RESULT SLIP (GRADE REPORT)

MANYWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE & TECHNOLOGY, BANDA

Name of College……Semester…….1st /2nd Year: 200…-200..

Name of Course……. Credit Hours.....

Instructor…….. Date of Exam……..Degree Programme……..

S. No.	Name of Student	I.D. No.	Examination (Marks Secured)				Total Marks	Grade Awarded	Attendance %	Remarks
			Internal			External				
			Mid Term	Assignment	Lab	Final				

Course Instructor Checked by Coordinator (Teaching) Registrar

4.5.1.2 Each copy of the Instructor's Result slip shall be signed by the Instructor and his/her HOD.

4.5.1.3 Each Instructor shall fill up the marks obtained in the various Examinations in the Semester and final grade obtained by the Student in the prescribed form. In case of over writing or alteration or cutting, the Instructor shall delete the whole line and re-write the whole matter and put his/her signature.

4.5.1.4 The Result Slips shall be prepared in four copies. The Instructor, at the end of the course in a Semester, shall send two copies of the result containing the marks of various Examinations during the Semester and grades of the students in his/her course to the Dean through HOD. The Dean shall forward one copy to the Registrar. The third copy shall be sent to the HOD and the fourth copy shall be displayed on the Notice Board for the information of students.

4.5.1.5 Each Instructor shall prepare the Result Slip College-wise and ID Number-wise.

4.5.1.6 The Instructor shall submit the Grade Slips within 6 days from the date of Examination positively.

4.5.2 Tabulation of Results

4.5.2.1 Tabulation of the results shall be done from the Instructor's Result slip in the office of the Dean and the Registrar separately, simultaneously and independently of each other.

4.5.2.2 The tabulation work shall be completed within three days from the last date of the receipt of the grade slips from the Instructors.

4.5.2.3 Tabulation sheets shall be supplied by the Registrar and tabulation at both offices shall be done in accordance with the procedure and Rules prescribed by the Registrar.

4.5.2.4 To assist the Registrar's office in the tabulation and preparation of results, each college shall depute clerk/typist(s) to the office of the Registrar.

4.5.2.5 Each tabulation sheet shall be signed by the Clerk Incharge and the Officer concerned.

4.5.3 Checking of Tabulation Sheets

4.5.3.1 After the tabulation sheets in the office of the Dean are ready, he/she shall send the same to the office of the Registrar, which shall be returned to him/her after the results, are compared.

4.5.3.2 The Deans of the Colleges will nominate two staff members from respective college for comparing the tabulation sheets prepared in two different offices.

4.5.3.3 In case any entry does not tally, the teacher deputed for this purpose shall check it from the original Result Slip, Registration Card, adding/withdrawal form too, if necessary and recalculate the Credit point average whenever found wrong. Each such correction shall be signed and separate entry shall be recorded for such mistakes by the checking Officer.

4.5.4. Preparation of Grade Reports

4.5.4.1 After comparison of the rolls by the checking office(s) is completed, the assistants shall transcribe the grades on the individual Student Performance Reports.

4.5.4.2 The teachers deputed for this purpose shall further check the transcribed grade on the Student Performance Report and put up their signatures on the individual Student Performance Reports.

4.5.4.3 The Student Performance Report shall mention specifically both the name of the course and course number.

4.5.5 Accuracy of Tabulation Charts/Sheets and Grade Reports

The tabulation clerks shall do their best to bring accuracy on preparation of tabulation charts/sheets and grade report. In case of more than three mistakes, he/she shall have to explain thereof.

4.5.6 Mid-term Report

The Instructor(s) concerned of the different courses shall send the mid-term reports of the students whose performance is unsatisfactory through the Advisor(s) to the guardian/parent on the prescribed Performa within ten days from the first pre-final examination. The results of the first pre-final exam shall form the basis for the purpose of this Regulation.

4.5.7 Student Records

All the student records maintained in the office of the Registrar shall be treated as official and final.

4.5.8 Evaluation and Grading and Significance of Credits

4.5.8.1 Each course offered in the University shall be given a certain number of credit hours in accordance with the amount of work which the student does in the class room, the laboratory and outside study.

4.5.8.2 Each student shall be examined in every course from time throughout the Semester. While examining the students, the Instructor shall mark individual questions in numerical (no rounding off) and then convert the total number of marks obtained into points.

The Credit Points obtained in course(s) will be calculated as under:

Points in a Course = Total marks obtained in a Course out of 100 ÷ 10

Credit Points in a Course = Points in Course × Credits of the Course

The significance of points for Undergraduate students shall be as follows:

Percentage of Marks	**Credit Points**
100	10.00
90 to below 100	9.00 to below 10.00
80 to below 90	8.00 to below 9.00
70 to below 80	7.00 to below 8.00
60 to below 70	6.00 to below 7.00
50 to below 60	5.00 to below 6.00
Below 50 (Fail)	Below 5.00 (fail)
For examples 80.95	 8.10
57.25	5.73
57.24	5.72
72.50 (but shortage of attendance)	Fail (F Grade)

4.5.8.3 After the marks obtained by a student at various Examinations held in a course during a Semester including Semester final Examinations marks are added up and the result is awarded.

4.5.8.4 If an undergraduate (UG) student obtains less than 50 per cent marks separately in theory as well as in practical in a particular course, he/she shall be awarded 'F' grade. No credit points shall be awarded for a course in which the student obtains 'F' grade. The student shall be required to repeat all the courses in which he/she has obtained 'F' grade for successful completion of the degree programme.

4.5.8.5 *Requirement of GOOD STANDING for Graduation:* The minimum overall credit point average requirement at the undergraduate level shall be 5.50 (out of 10.00) provided that the student must have taken minimum of 24 and the 48 credit hours of courses at the end of 2^{nd} and 4^{th} semester, respectively.

4.5.9 Calculation of CPA/OCPA

4.5.9.1 Credit Point Average (CPA), and Overall Credit Point Average (OCPA) shall be calculated using following formulae up to three decimal place:

The Credit Point Average (CPA) for all the courses taken by a student in semester shall be calculated is given below:

				Marks obtained/Maximum Marks						
S.No.	**Course No.**	**Course Title**	**Credit Hours**	**Mid-term Examination**	**Practical/ Assignment/ Spotting**	**Final Examination**	**Total**	**Points**	**Credit Points obtained in the Course (Column 9 × Column 4)**	**Credit Point Average (CPA)** Total of Colomn 10/ Total of Column 4
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1	PBG 101		3(2+1)	17/20	29/30	26/50	72/100	7.20	7.20×3=21.60	
2	AGRON 101		1(1+0)	18/20	9/10	65/70	92/100	9.20	9.20×1=9.20	72.20/9=8.02
3	CSE 101		2(1+1)	12/20	27/30	30/50	69/100	6.90	6.90×2=13.80	
4	AGRON 401		3(1+2)	19/20	28/30	45/50	92/100	9.20	9.20×3=27.60	
	Total		**9**						**72.20**	

NOTE 1:- Credit Points = Points obtained in a Course × Credit Hours of a Course

NOTE 2:- Credit Points Average (CPA) = Total Credit Points/Total Credit Hours taken by students in a semester

OCPA will be calculated as under, for a student who has taken a regular courses (without repeated course)

OCPA = ∑ Total Points Secured/∑Course Credits

OCPA will be calculated as under, for a student who has taken a regular course (with a repeated course)

OCPA = ∑ Total Points earned (after excluding failure points)/∑ Course Credits

A minimum Grade Point Average is required to be maintained for satisfactory progress. Also, a minimum number Credit should be acquired in order to qualify for the Degree.

4.5.9.2 The following shall be the formula for conversion of OCPA (Overall Credit Point Average) into aggregate percentage of marks

(i) Formula: Percentage of Marks = OCPA × 100/10

(ii) e.g. if the OCPA is 6.00 then the percentage of marks would be 6.00 × 100/10 = 60%

4.5.10 Number of Semesters for Completion of Degree and Awards of Divisions for UG Degree Programmes

4.5.10.1 The requirements for completion of B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture will be normally eight and maximum twelve semesters.

4.5.10.2 Divisions will be awarded to the student upon the completion of the all requirements for his/her Degree programme.

(i) Second Division will be awarded to a student having obtained OCPA of 5.50 but less than 6.50 at the completion of Degree requirements.

(ii) First Division will be awarded to a student having obtained OCPA of 6.50 and above at the completion of Degree requirements

4.5.11 Uniformity of Standards for Examinations

4.5.11.1 When a course is being taught by more than one Instructor the common course work, evaluation, grading and final marking shall be on a common standard for all the Examinations. They shall mutually consult each other, the HOD and the Dean in this regard.

4.5.11.2 When more than one Instructor(s) are teaching the same subject to the same class in various groups, they shall maintain the uniformity of standards for the same class and for the same course examined at the same time through a common Examination conducted by all the Instructors together and grades given on the basis of consensus. If the Instructors are unable to reach the consensus, they shall give marks separately according to their own judgment. The grades shall be based on the average of the marking by all the Instructors.

4.5.11.3

(i) If HOD is satisfied or has reasons to believe that marking/grading in a particular course has been abnormal, he/she shall submit a detailed report to the Dean of the College concerned recommending re-evaluation or re-assessment of the answer books giving full details of the reasons for his/her belief that the marking/grading has been abnormal.

(ii) On receiving such a report, the Dean, after such an enquiry or checking as he/she may deem proper, pass necessary orders on the report.

(iii) In case the Dean is satisfied that there is not a *Prima facie* case and there has been no abnormality in marking/grading of the answer books, he/she may communicate the same to the HOD and submit a report accordingly to the Vice Chancellor.

(iv) In case where the Dean is satisfied that there is a *Prima facie* case he/she shall appoint a committee for re-assessment and re-Examination of the answer-books with the approval of the Vice Chancellor. The committee shall consist of 3 to 5 members, the majority of whom shall be of the same specialization in which the answer books are to be re-examined. The committee shall submit its report within a week from the date of receiving such a reference. Among other things, the committee shall specifically report whether the grading/marking has been uniform or whether there has been any abnormality in marking/grading from student to student and also whether in the opinion of the committee the abnormal variation has been because of negligence or of any mala fide intentions.

(v) If as a result or re-evaluation of the answer books, it is found that the marks awarded by the Instructor are not significantly different, there should be no change in the marks/grades.

(vi) In case, however, it is revealed that the variation in marking/grading as reported by the committee and as done by the Instructor is significant, the marks awarded by the committee shall be treated as final. Consequent changes(s) in grades as a result of re-marking of the answer books shall be affected after the approval of the Vice Chancellor.

(vii) All re-assessment or re-evaluation that may be necessary, shall be completed within two weeks of the date of registration in the following Semester, except in case of final Semester students who are to complete their degree in a particular Semester when it should be completed within a week from the date of registration in the following Semester after which all such cases shall be treated as closed and no re-evaluation shall be done under any circumstances.

4.5.12 Scrutiny

4.5.12.1 Scrutiny means checking of marks, Examination of question(s) left unmarked and reassessment of the question(s) already marked in the answer books of the students.

4.5.12.2 Student shall have to file an application on the prescribed form which can be obtained from the office of the Registrar.

4.5.12.3 If any student desires scrutiny in any course, he/she shall be permitted to do so with a scrutiny fee of Rs. 200/- per paper.

4.5.12.4 Application for scrutiny of results shall be entertained within a period of seven days from the date of registration in the semester, after which no such application shall be entertained.

4.5.12.5 After having the approval of the Registrar, he/she will present the form to the Instructor concerned in the collaboration with Head of Department.

4.5.12.6 The result of scrutiny shall be intimated to the Registrar as soon as possible, but in no case later than three weeks from the date of registration the result of the scrutiny shall be final.

4.5.13 Change of Credits as a Result of Scrutiny

After the Credits are revised as a result of scrutiny, the Instructor will send the grade with reasons under which grade has been revised, through his/her HOD to the Dean, who will examine and forward the same to the office of the Registrar. All such grades revised as a result of scrutiny will be forwarded to the Vice Chancellor after the last date of scrutiny. Necessary correction in the student's report card would be made after the approval of the Vice Chancellor is received.

4.5.14 Retention of Examination Answer Books

4.5.14.1 Registrar office must retain the answer books with it till last date for revision of the grades was over.

4.5.14.2 After the last date for revision of the grades is over and the revised results have been declared by the Registrar office, marked answer book will be retained in Registrar office for one year and will be disposed off thereafter following the approval of Vice Chancellor.

4.5.15 Use of Unfair Means

4.5.15.1 The terms 'Use of unfair means in the Examination' or 'Attempt to use unfair means in the Examination' shall denote the items prescribed by the Academic Council, through its resolutions, from time to time. The following items are included in the category:

(i) Possession of any books, notes, chits or such other material and also any note(s) or signs written on any part of the body, furniture or any other material pertaining to the subject-matter or the Examination in the Examination Hall during the Examination hours.

(ii) Talking, whispering or signaling in any form in the Examination Hall or outside the Examination Hall during the Examination hours.

(iii) Copying or allowing to copy.

(iv) Any other activity, which may give undue advantage in the Examination to any student.

(v) Any attempt to use any other means, which in the opinion of the Vice Chancellor may be construed to be unfair.

4.5.15.2 Every student shall be required to bring his/her own Examination material, such as set squares, scales and the like, himself/herself, as he/she shall not be permitted to borrow any of these material from fellow students in the Examination Hall.

4.5.15.3 If any student is found to have used or attempted to use 'Unfair means' in any Examination, his/her answer-book shall be seized by the Invigilator Incharge forthwith. The student may, however, be permitted to answer the remaining part of the question paper but on a separate answer book.

4.5.15.4 The Invigilator Incharge shall submit a detailed report along with the answer books of the student and other related material, if any, to the Examination Superintendent/Dean of the College concerned immediately after Examination is over, with a copy to the Registrar & the Dean of the College concerned.

4.5.15.5 A written statement of the student, found to use or attempting to use unfair means in the Examination Hall will be obtained by the Invigilator Incharge and be forwarded with his/her report along with any other materials found with the student, which should be signed by the student concerned confirming that the same having been recovered from his/her possession.

4.5.15.6 In case the student refuses to give a statement, he/she shall not be forced to do so but the fact of his/her refusal is to be recorded by the Invigilator Incharge in his/her report.

4.5.15.7 The Examination Superintendent shall forward the report of the Invigilator Incharge to the Student Disciplinary Committee for detailed investigation, which shall send its report to the Vice Chancellor with specific recommendations within a week from the date of report.

4.5.15.8 Students found using or attempting to use unfair means or copying during a pre-final Examination shall be debarred from that Semester.

4.5.15.9 Students in possession of copying material, mobile phone /blue tooth or found using unfair means during the final semesters/supplementary examination will be deemed to have failed in all courses taken by him/her in relevant semester and placed in conduct probation for two subsequent semesters. However, if a student is found in possession of copying material, mobile/blue tooth or found using unfair means for the second time, in any of the examination he/she may be deemed to have failed in all

courses taken by him/her in the relevant semester and also debarred from the college /University during the subsequent semester.

4.5.15.10 Debarring a student would be treated as having been dropped from the University.

4.5.16 Medium of Examination

The medium of Examination shall be English only.

4.5.17 Medium of Instruction

Medium of instructions for Undergraduate Programme will be English. However, the teacher may also explain the subject matter simultaneously in Hindi for fresh students during the first semester.

CHAPTER 5

REGULATIONS ON THE AWARD OF POSTGRADUATE DEGREE

5.1 ADVISOR

Every student on admission to the college of Postgraduate Studies shall be assigned to an advisor. An Advisor must be specialist in the field of studies of the student and shall be:

5.1.1 A statutory member of the Board of Postgraduate Faculty.

5.1.2 Staff of the University accredited for appropriate Postgraduate level of research.

5.1.3 Staff at the other institutions who are given honorary membership of Postgraduate Faculty in case of joint training programme.

5.1.4 The HOD concerned shall propose an Advisor for each and every student in the Department according to guidelines, if any, within one month of date of registration of the student and submit the proposal to the Dean of the College concerned. The Dean of the College concerned may, at his/her discretion either endorse the proposal submitted by the HOD or propose change in the proposal submitted by the HOD and forward the final proposal to the Dean Postgraduate Studies normally within fifteen days of the receipt of the proposal from the HOD. The reasons for not accepting the proposals of HOD shall be recorded in writing by the Dean concerned with a copy to the HOD concerned. In case there is difference of opinion between Dean of the college and Dean, Postgraduate Studies, the matter shall be referred to the Vice Chancellor whose decision shall be final. The Dean, Postgraduate Studies shall intimate the final approval on the proposal normally within fifteen days of the receipt of the proposal from the Dean of the College concerned.

The allotment of PG students shall preferably be made to those accredited faculty members who have research project (funded by outside agencies like ICAR/CSIR/AICTE etc.) in their name as Project Leader/Co-Project Leader. While allotting the PG students to the faculty members, a Committee of 3 to 5 members (consisting of HOD, senior faculty members) will be constituted in each Department. The said Committee shall examine the allotment of students considering the infrastructure/facilities available in the Department/project and also in the interest of the candidates for area of their specialization. Further, the maximum number of students with a faculty member at a given time will be 5 each in M.Sc. and Ph.D. Programmes.

5.1.5 An Advisor once assigned to a student will normally not be changed. Where the need for the change of Advisor become necessary, either because the Advisor or in any other circumstance where the Dean of the College of Postgraduate Studies is convinced or has reasons to believe that the change of Advisor has become imminent, the Dean PGS may after consultation with the HOD, the Dean of the college concerned, and such member of the Advisory Committee as he/she deems proper, allow assignment of another Advisor.

In all such cases, the circumstances under which such a change became unavoidable shall be recorded and intimated to the Registrar. While assigning another Advisor, among other things, the stage of the research work/thesis of the student and the guidance required as well as the availability/possibility of the Advisor providing the guidance without detriment to the quality of thesis/research or unduly prolonging the duration of the thesis/research work must be taken into consideration.

5.1.6 Normally no staff member registered for Ph.D. degree of this University shall be an Advisor and if an Advisor registers himself/herself for a Ph.D. degree of this University, he/she shall cease to be an Advisor thereafter.

5.1.7 **Allotment of Students to the Retiring Teachers**: Normally, retiring Teachers may not be allotted M.Sc. student if he/she is left with less than 2 years of service and Ph.D. student if left with less than 3 years of service. However, in special circumstances, permission may be obtained from the Dean PGS by the concerned HOD.

5.2 ADVISORY COMMITTEE

5.2.1 For every student in the College of Postgraduate Studies, there shall be an Advisory Committee consisting of not less than three members in the case of a candidate for Master's degree and four in the case of Ph.D. degree with the Advisor as Chairperson. The Advisory Committee should have representative from the major and minor fields.

5.2.2 The Advisor in consultation with the HOD concerned shall within fifteen days of his/her appointment as Advisor recommend through the Dean of the college concerned to the Dean of the Postgraduate Studies, names of the members of the Advisory Committee from amongst the members of the PG Faculty and the staff of the University accredited for appropriate Postgraduate level research. However, in those Departments where qualified staff exists but due to unavoidable reasons Postgraduate degree programmes do not exist, the staff having postgraduate teaching experience of three years or more may be included in the Advisory Committee as member representing the minor.

5.2.3 The Dean of the College of the Postgraduate Studies shall appoint the committee by the end of the Semester of student's admission in the PG programme after making such changes, as he/she considers necessary.

5.2.4 The Advisor should convene a meeting of the Advisory Committee at least once in a Semester. The summary record should be communicated to the HOD, Dean of the College concerned, Registrar and Dean, Postgraduate Studies for information.

5.3 STAFF MEMBERS ON EXTRAORDINARY LEAVE OR STUDY LEAVE OR EX-STAFF TO CONTINUE AS ADVISOR

Normally staff members of the University on extraordinary leave or on study leave or who leave the University service will cease to continue to serve as Advisors of the

Postgraduate Students of the University. However, the Dean, Postgraduate Studies may permit them to continue to serve as Advisor subject to the following conditions:

5.3.1 The concerned staff member must be resident in India and if he/she agrees to guide research, must be available for occasional consultations.

5.3.2 An application is made by the student concerned and that is duly supported by the Advisory Committee.

5.3.3 In case of a Ph.D. student, he/she must have completed his/her preliminary Examination and the research work must be well in progress and it is expected that the student will submit the thesis within a year.

5.3.4 The HOD and the Dean of the College concerned agree to the proposal.

5.3.5 The staff member, after leaving the University service is granted the status of honorary faculty's membership by the Vice Chancellor on the recommendation of the Dean, Postgraduate Studies for guiding the thesis/theses of the students(s) concerned only.

5.4 STAFF MEMBER FOR GUIDING OUTSIDE STUDENTS

5.4.1 Teachers in the University Departments where Ph.D. programme do not exist or where there is no likelihood of Ph.D. programmes being started in the near future be permitted to guide research of outside students registered in other University subject to the following conditions:

(i) Such permission should be restricted in number.

(ii) When a student utilizes the facilities provided by the University, a special permission shall have to be obtained and the student shall have to pay for such facilities.

5.4.2 In case of staff members of this University only, registered at some other University for Ph.D. degree, may be permitted by the Vice Chancellor to guide such student. In case the University where the staff member has been registered for Ph.D. degree requires that a person in the Department of this University may act as Co-guide/Co-supervisor that may also be permitted by the Vice Chancellor.

5.5 REQUIREMENT FOR THE MASTER'S DEGREE

5.5.1 A minimum of 45 Semester credit hours shall be required for the Master's degree out of which 15 credits may be earned by research and thesis work.

5.5.2 The remaining Semester credit hours may cover course work in one major field, or the candidate may select a major and one minor field with the approval of his/her Advisory Committee, the concerned HOD, the Dean of the college concerned and the Dean Postgraduate Studies. Such minor shall carry at least 8 Semester credits in that field.

5.5.3 As Undergraduate pre-requisites for Postgraduate study in his/her major and minor subjects, a student must have completed such work as the Department

concerned may require. If a student is deficient in his/her Undergraduate pre-requisite, he/she may remove such deficiency by taking course for which graduate credit will not be given.

5.5.4 Full-time staff members registered for Master's degree programme shall be exempted from the formal registration of thesis/research credits for the degree if the Advisory Committee certified that the research carried out by the candidate in the discharge of duties as a member of the staff had been used for thesis and the amount of work put in was equivalent to a minimum of 15 credits as the case may be.

5.6 REQUIREMENTS FOR THE Ph.D. DEGREE

5.6.1 The minimum requirement for course work for Ph.D. after Master's degree shall be 30 Semester credit hours made up of one major and at least one minor field. Not more than two minors shall be permissible.

5.6.2 The Ph.D. major should carry at least 20 Semester credits.

5.6.3 The group of courses to be known as 'Minors' should carry 10 Semester credits and should not be from the same field of study as the major.

5.6.4 In case of two 'Minors' the course requirements may go up to 40 credit hours instead of 30 credit hours as prescribed in (a) above. If, however, both the 'Minors' are in closely related fields, the course requirement in each minor shall be minimum of 8 Semester credit hours.

5.6.5 The minimum requirement for thesis work for Ph.D. shall be 30 credit hours.

5.6.6 In the case of full time staff members registered for Ph.D. degree, the maximum credits permissible in a Semester would apply only to course work. No formal registration for thesis would be required, if the Advisory Committee certified that the research carried out by the candidate in the discharge of duties as member of the staff, had been used for thesis and the amount of work put in is equivalent to a minimum of 30 credit hours.

5.7 PROGRAMME OF STUDY

5.7.1 A detailed programme of studies giving the course requirement of the students admitted to the Master's or Ph.D. degree programme shall be prepared by the respective Advisory within first fifteen days of the second Semester of the joining of the students through the HOD and Dean of the college concerned to the Dean PGS. For his/her approval the Dean PGS shall issue the approved programme of studies within one month of the receipt of the programme of studies by the Advisors after making such changes, as he/she may deem necessary.

5.7.2 The programme of study shall be prepared out of the approved courses and shall be so devised as to ensure the inclusion of the core, major and basic supporting courses prescribed.

5.7.3 Making Core Courses of M.Sc. Programme of a particular Discipline Compulsory at Ph.D. level for the Students admitted from the related Majors: The students admitted to a Ph.D. degree in a discipline from the related area would be required to study the core courses of the Master's degree of that discipline. This will be over and above the requirements of 30 credits.

5.8 COURSES

5.8.1 There shall be the following types of courses in each Postgraduate major:

(i) Core Courses.

(ii) **Major:** These shall consist of courses from the Department concerned, which are compulsory for particular major.

(iii) **Supporting Courses:** These courses shall consist of such basic supporting courses from Departments, other than the major Department, which shall also be invariable components of each individual programme of study of Postgraduate students taking up a particular major.

(iv) **Open Electives:** These shall consist of the courses both from the major Department and other Departments which may be required to be offered by a Postgraduate student.

5.8.2 The core and basic supporting courses in each major shall be compulsory for all Postgraduate students and shall carry credits. If a student has studied the equivalent course(s), the matter may be examined by the Committee consisting of (i) Advisor of the student, (ii) Head of the majoring Department concerned, (iii) The HOD to whom the course belongs, on whose recommendations the Vice Chancellor may exempt the student from studying the course(s).

5.8.3 For each Postgraduate programme, the core courses and basic supporting courses shall be defined by the Department concerned and approved by the Academic Council

5.8.4 Of the total course requirement for the Postgraduate degree, the composition of the Core, Basic Supporting courses and Open Elective shall be as follows:

		Master's degree	**Ph.D. degree**
(i)	Core & Basic Supporting Courses	2/3	1/2
(ii)	Open Elective	1/3	1/2

5.9 CHANGE IN THE PROGRAMME OF STUDIES

No change in the programme of studies shall normally be permitted. However, under special circumstances Dean, Postgraduate Studies may, on the recommendation of the Advisory Committee/Head(s) of Department(s) and Dean(s) of College(s) concerned, for

reasons to be specified, permit a change in the programme of studies comprising of the Open Elective component of the major.

5.10 EVALUATION

Each student shall be examined in every course from time to time throughout the Semester. While examining the students, the Instructor shall mark individual questions in numerical (no rounding off) and then convert the total number of marks obtained into points.

5.10.1 The Credit Points obtained in course(s) will be calculated as under:

Points in a Course = Total marks obtained in a Course out of 100 ÷ 10

Credit Points in a Course = Points in Course × Credits of the Course

The significance of Credit Points for Postgraduate students shall be as follows:

Percentage of Marks	**Credit Points**
100	10.00
90 to below 100	9.00 to below 10.00
80 to below 90	8.00 to below 9.00
70 to below 80	7.00 to below 8.00
60 to below 70	6.00 to below 7.00
Below 60 (Fail)	Below 6.00 (fail)
For examples 80.95	 8.10
57.25	5.73
57.24	5.72
72.50 (but shortage of attendance)	Fail (F Grade)

5.10.2 A student shall be eligible for the award of Master's degree only if he/she maintains an OCPA of 6.50 out of 10.00, in 500 series courses included in the course programme. However, a student shall be eligible for the award of Ph.D. degree only if he/she maintains an OCPA of 7.25 out of 10.00.

5.11 RESEARCH THESIS

5.11.1 Requirements of the Master's degree shall include successful completion of scientific investigation and creditable research reported in the form of a thesis.

5.11.2 The ability to widen the field of knowledge by distinct original contribution shall be one of the outstanding qualifications for the Ph.D. degree. A candidate must therefore, present satisfactory evidence of such ability by submitting a thesis embodying the results of the research on a creditable problem within the field of his/her major subject.

5.11.3 **Seminar before writing of the Thesis:** Each Ph.D. student should present seminar on his/her thesis in the Department, which will be open to all before submitting his/her thesis.

5.12 SUBJECT OF THE THESIS

5.12.1 The subject of research thesis must be approved by :

(i) Advisory Committee of the student.

(ii) The Head of the Department in which the student is majoring.

(iii) The Dean of the College Where the research is carried out.

(iv) The Dean, Postgraduate Studies.

5.12.2 The approved problem of research shall be communicated by the Dean, Postgraduate Studies to the Registrar not later than two Semesters from the time of admission of the student. The actual title of the thesis may be communicated later, but it must reach the office of the Registrar at least a month before the date of the submission of the thesis by the candidate.

5.12.3 No change in the title of the thesis can be made without the prior written permission of the Dean, Postgraduate Studies.

5.13 SUBMISSION OF THESIS

5.13.1 A candidate for Master's or Doctorate degree must present, three typed written copies of the thesis approved by his/her Advisory Committee and forwarded by the HOD latest by the end of the Semester to the Dean, Postgraduate Studies. In case of fellowship holders, the number of copies as prescribed by the Dean PGS shall be submitted.

5.13.2 If a candidate fails to submit the thesis before the commencement of the subsequent Semester, he/she shall be required to register himself/herself for the Semester and pay the necessary dues.

5.13.3 The student shall not be required to pay any fee for the period between the submission of thesis and the conduct of the Viva-voce Examination. For all purposes the students shall be considered to have been enrolled till the end of the month in which the thesis is submitted.

5.13.4 **Submission of Research Paper along with the Thesis:** At least one research paper must be submitted by the Ph.D. students prior to submission of Ph.D. thesis. Further, the Dean PGS will have a certificate from the Advisor to this effect along with the copies of the paper(s) from each Ph.D. students at the time of Ph.D. thesis submission.

5.13.5 **Number of Thesis abstracts to be submitted by the Ph.D. Students:** Ten copies of thesis abstracts must be submitted by a Ph.D. student at the time of submitting the thesis.

5.14 APPOINTMENT OF EXTERNAL EXAMINER

After the receipt of the thesis, the Registrar, in consultation with Dean of Postgraduate Studies, shall appoint an examiner who shall not be a person of the staff of the University in the following manner:

5.14.1 The Advisor in consultation with the HOD concerned shall suggest for every thesis a panel of at least three names for being appointed as examiner, which shall after the approval of the Dean of the College concerned, be submitted to the Registrar the name of the person to be appointed as examiner.

5.14.2 Where the number of students to be examined in any field of specialization is more than four, additional examiner(s) may be appointed to the panel.

5.14.3 Normally, no person should be appointed as examiner for more than two years consecutively. After a break of one year or more the same person shall, however, be eligible for re-appointment.

5.14.4 The Chairperson, Advisory Committee or in his/her unavoidable absence, the HOD concerned shall act as the Internal Examiner.

5.14.5 While asking the consent of the examiner for evaluating the thesis, it shall also be indicated to him/her that the thesis for a Master's degree has to be evaluated within 30 days and the thesis for a Ph.D. degree has to be evaluated within 60 days and in case the evaluation of the thesis is provided. The Viva-voce Examination shall not be conducted before 15 days have elapsed from the date of the dispatch of the thesis by the office of the Registrar.

5.15 EVALUATION OF THESIS

5.15.1 After the Advisory Committee of a Postgraduate student has been satisfied with the quality and the norms prescribed by the Dean PGS for the assessment of the thesis, the Chairperson, Advisory Committee shall forward the thesis to the HOD.

The HOD after being satisfied shall forward the thesis to the Dean, Postgraduate Studies, who shall forward the same to the Registrar for its evaluation by the examiner appointed for the purpose.

5.15.2 In case the HOD does not approve the thesis, he/she shall assign reasons for the same and return the thesis to the Chairperson, Advisory Committee for necessary modifications.

5.15.3 The thesis shall be sent to the external examiner by registered post and the Examiner must send the report of the evaluation of the thesis to the Registrar.

5.15.4 On receipt of a favourable thesis evaluation report from the External Examiner, the Registrar shall communicate the same to the Advisor along with the date suggested by the External Examiner for the conduct of Examination. If the External Examiner has suggested no date, the Advisor and External Examiner will decide a date and communicate it to the Registrar for approval. The Examination may be conducted within 15 days before or after the date approved

for the Examination without violating the provision of Regulation 5.15.5. In case the Examination is not conducted within this period, a fresh date may be requested for by the Advisor and approval obtained. The Examination shall be conducted on that date. The Examination conducted without prior approval of the Registrar will not be accepted and re-examination shall be arranged. If any oral Examination has been conducted in violation of this Regulation, the University shall not be liable to pay TA & DA to the External Examiner. Under exceptional circumstances, however, the decision of the Vice Chancellor in this regard shall be final.

NOTE:-The above procedure shall also apply for oral preliminary Examinations (in case of Ph.D. students).

5.15.5 In case the thesis is rejected by the External Examiner, a student shall be required to resubmit the thesis after incorporating the changes as required not earlier than three months from the date of rejection of thesis after payment of proper registration fees.

Provided that a student shall be allowed not more than three chances to modify his/her thesis after its rejection by the external examiner and as far as possible same external examiner shall be appointed to evaluate his/her thesis.

5.16 PRELIMINARY EXAMINATION

5.16.1 A candidate for the Ph.D. degree of the University shall be required to pass a preliminary Examination to be conducted in three phases namely: written Examinations in major and minor subjects separately, oral Examination by the Advisory Committee and oral Examination by the External Examiner along with the Advisory Committee.

5.16.2 A candidate for the Ph.D. degree of the University shall be required to pass a preliminary Examination only after completing the course work with a minimum OCPA of 7.25 in 500 and higher series courses included in the programme of studies. In special cases, however, a student may petition to Dean PGS for relaxation of this Regulation provided he/she has completed at least prescribed courses for the minor and at least 75% of the courses prescribed for the major with the minimum OCPA requirements specified above.

5.16.3 The preliminary Examination shall consist of written and oral tests covering the entire field of study of the candidate for the Ph.D. degree.

(i) **Written Preliminary Examinations:** The written Examination in major field of study shall be conducted by the Advisory Committee other than the member from the minor area under the coordination of Advisor. The written Examination in each minor field of study shall be conducted by the member of Advisory Committee from the respective minor field of study.

(ii) The student shall be required to secure satisfactory grade(s) by securing not less than 60% marks in the major and minor areas separately. A student securing unsatisfactory (US) grade in major or minor field of studies shall have to appear

for written Examination after a lapse of not less than one month if he/she fails in one paper, and after a lapse of one Semester, if he/she fails in both major as well as minor.

(iii) The student shall apply for written preliminary Examination to the Registrar through Advisor, HOD and the Dean PGS. The Examination shall be conducted only after written approval for the same by the Registrar.

(iv) The result of the written preliminary Examination shall be sent by the Advisor/Examiner of minor field to the Dean PGS and the Registrar through HOD of the major Department and that of the oral preliminary Examination by the Advisor through the same channel.

(v) **Oral Preliminary Examinations:** After successfully completing the written preliminary Examination, each Ph.D. student shall be required to appear for oral preliminary Examination to be conducted by the Advisory Committee on approval of the Dean PGS. The result of the Examination shall be sent to the Dean PGS by the Advisor and if the student has been cleared by the Advisory Committee, he/she will be allowed to take oral preliminary Examination to be conducted by the External Examiner along with the Advisory Committee. The student shall be graded Pass or Fail at both the stages of oral preliminary Examination.

(vi) If a student fails in oral preliminary Examination conducted by the Advisory Committee, he/she shall not be eligible to re-appear in the Examination before the expiry of one month. If a student fails in an oral preliminary Examination conducted by the Advisory Committee along with the External Examiner, he/she shall not be permitted to re-appear in this preliminary Examination before the expiry of a period of one month.

(vii) No candidate shall be permitted to appear in the written or oral preliminary Examination more than two times. Normally, the same External Examiner shall be associated with the conduct of second oral preliminary exam. However, in special circumstances, another External Examiner can be appointed by the Dean PGS after obtaining a panel of External Examiners from the Advisor and the HOD.

NOTE:-The oral preliminary Examinations in respect of Ph.D. programmes may be held by grouping the candidates in the Departments, as far as possible on quarterly basis. For this purpose, a panel of 3 Examiners with their specialization will be submitted by the Advisors/Project Guides to the HOD, who will communicate the same to the Dean PGS through Dean of the college concerned. The Dean PGS will finally select the Examiners from the list so provided by the HOD for seeking consent as per existing procedure. If M.Sc. student also requires undergoing through these programmes, same procedure may also be applied.

5.17 FINAL VIVA-VOCE EXAMINATION

5.17.1 A Postgraduate student failing to show 'Satisfactory' performance in his/her final Viva-voce Examination shall be permitted by the Registrar to take the Examination again after expiry of at least three months from the date of his/her first Viva-Voce Examination.

5.17.2 In case the student again fails to show 'Satisfactory' performance in the second chance, he/she shall be given a third chance by the Registrar to take the Viva-Voce Examination after the expiry of at least one month from the date of his/her second Viva-Voce Examination. No further chance to take the Viva-Voce Examination shall be given.

5.17.3 Normally the same external examiner shall be associated with the conduct of second and third Viva-Voce Examination.

5.17.4 The Viva-Voce Examination in case of Ph.D. student shall be held at College/University level. The Chairperson of the Advisory Committee will ensure to notify the venue, time and date of the thesis Viva-Voce Examination of the student to all PG Departments/Dean/Directors and also make all necessary arrangements for the same.

5.17.5 For conduct of Viva-Voce Examination at both Master's and Ph.D. level, another External Examiner may be invited to conduct the Viva-Voce Examination based on the report of the first External Examiner, if he/she (who evaluated the thesis) has sent his/her refusal not to conduct the Viva-Voce Examination.

5.18 ADDITIONAL REQUIREMENT FOR PH.D. DEGREE

A Postgraduate student may also be required to undertake and complete successfully the additional requirements necessary for the degree he/she is registered for.

5.19 REMUNERATION TO EXTERNAL EXAMINERS

5.19.1 A person not on the staff of the University, who is appointed to examine the thesis and conduct the Viva-Voce Examination thereof for the M.Sc. and Ph.D. degree or conduct the oral preliminary Examination, shall be paid the remuneration as decided by the Academic Council from time to time. The present rates of remuneration are as follows:

Particular	**Remuneration per student**	
	M.Sc.	**Ph.D.**
(i). To evaluate the thesis and conduct Viva-voce Examination	Rs. 800/-	Rs. 1200/-
(ii). To evaluate the thesis only, at each time	Rs. 400/-	Rs. 600/-
(iii). To conduct oral preliminary, exam at each time	-	Rs. 600/-

5.19.2 Normally the same External Examiner shall be appointed to evaluate the thesis and conduct the Viva-Voce Examination at each subsequent time with regard to the same student.

5.20 COLLABORATION FOR Ph.D. DEGREE WITH OTHER INSTITUTIONS

5.20.1 A student may be permitted to complete the course requirement or research work for his/her degree in full or in part at another institution subject to following conditions:-

(i) The courses to be taken and the credits to be given shall be determined by the Dean PGS in consultation with the authorities concerned.

(ii) The research problem shall also be approved by the Dean PGS in consultation with the concerned authorities of this University and the Co-advisor of the student at the institution where the research work has to be undertaken.

5.20.2 Where a candidate for a Postgraduate degree of the University is permitted to complete the course work or research in full or in part at another institution recognized for this purpose, such course or research work may be accepted in fulfillment of the course requirement, or may be permitted to be submitted as thesis for the same degree at this University. Further if the candidate has successfully completed the preliminary Examination at the cooperating institution, he/she shall also be exempted from taking the preliminary Examination at this University.

5.21 MINIMUM CLASS ATTENDANCE

5.21.1 Each student shall be regular in attending classes and shall be required to have a minimum of 85 percent attendance in each course in each Semester, failing which he/she be awarded 'F' grade unless withdrawal from the course has been permitted. This, however, shall not apply to students leaving the University to join the Armed Forces during a period of emergency provided that they attended classes and tests for at least 14 weeks in that Semester.

5.21.2 The percentage of attendance of a student in a course of lectures, practical, tutorials attended by him/her and those actually held between the date of commencement of instruction and the date of closing of instruction, irrespective of the date of his/her registration and/or the duration of leave duly granted to him.

5.21.3 The Vice Chancellor may, on the recommendations of the Instructor/Advisor/Dean of the college where the Department is situated and the Dean PGS condone shortage in attendance up to ten percent in a course(s) in exceptional circumstances and allow students with an attendance of seventy five percent to appear at the final Examination.

5.21.4 More than ten percent shortage of attendance shall not be condoned under any circumstances.

5.22 CONTINUANCE

For continuance in the University, a Postgraduate student shall maintain a minimum OCPA of 6.50 in case of Master's and 7.25 in case of Ph.D. out of 10.00 in programme in each Semester in 500 and higher series of courses included in his/her programme of studies.

5.23 ACADEMIC PROBATION

If at the end of any Semester, the overall Credit point average of any Postgraduate student falls below 6.50 in case of Master's and 7.25 in case of Ph.D. programme out of 10.00 in 500 and higher series of courses included in his/her programme of studies, he/she shall be placed on 'Academic Probation' for the duration of the following Semester.

5.24 REMOVAL FROM ACADEMIC PROBATION

If at the end of any Semester during which a Postgraduate student has been on Academic Probation, the overall Credit point average of that student for that Semester in 500 and higher series courses is 6.50 for Master's and 7.25 for Ph.D. or above out of 10.00, he/she shall cease to be on 'Academic Probation'.

5.25 DROPPING FOR POOR ACADEMIC PERFORMANCE

5.25.1 If at the end of any Semester during which a Postgraduate student has been on Academic Probation, the Overall Credit Point Average of the student in 500 and higher series courses falls below 6.50 out of 10.00 in case of Master's and 7.25 out of 10.00 in case of Ph.D. programme, he/she shall be dropped from the University for poor academic performance with a right to petition for re-admission. However, a student falling in the following categories will be finally dropped from the University with no right to petition for re-admission:

(i) A student having an OCPA less than 6.00 in case of Master's and 6.50 in case of Ph.D. programme out of 10.00.

(ii) A student having 6.00 points in more than 10 credits.

5.25.2 Any Postgraduate student failing twice in the same course/Examination shall be dropped from the University for Poor Academic Performance. In exceptional circumstances, the Vice Chancellor may permit a third chance to pass the course to the student on the recommendation of the concerned Advisor, HOD and Dean PGS. Any student failing in the same course/Examination thrice shall be finally dropped from the University with no right to petition.

5.25.3 No Postgraduate student shall register again in a course, which he/she has already cleared with a passing grade. If he/she registers again a course already passed, the subsequent grade shall be ignored.

5.25.4 A Postgraduate student unable to complete his/her courses as well as thesis within maximum permissible degree duration with an OCPA of 6.50 in case of

Master's and 7.25 in case of Ph.D. programme out of 10.00, will be finally dropped from the University with no right to petition.

5.25.5 A Postgraduate student whose petition has been rejected by the Vice Chancellor will have no further right to petition for re-admission.

5.26 PETITION FOR RE-ADMISSION

Any Postgraduate student dropped from the University for Poor Academic Performance shall have the privilege of petitioning to the Vice Chancellor for re-admission.

5.27 DISPOSAL OF PETITIONS

Petition for re-admission after dropping on academic grounds must be filed within one week from the date of registration for the Semester immediately following the Semester in which the student has been finally dropped. No petition may be entertained after this date.

All petitions made by the dropped students for re-admission shall be examined by a Petitions Committee appointed by the Vice Chancellor. The Petitions Committee shall advise the Vice Chancellor in respect of each petition whether it may be rejected or accepted subject to such conditions as the committee may deem fit. In case any student has to take make-up Examination, his/her performance for the purposes of dropping shall be judged on the basis of results already available without waiting for make-up Examination results. The decision of the Vice Chancellor in such cases shall be final. Once a petition has been rejected by the Vice Chancellor, no further petition shall be entertained.

5.28 REPETITION OF COURSES

5.28.1 If a Postgraduate student secures a failing grade in a course included in his/her programme of studies, he/she has to repeat the course and shall be provided one more chance to pass the course. In case, however, he/she again fails in the course(s), no further chance to repeat the course shall be given and the student shall be dropped from the University.

5.28.2 In case a Postgraduate student obtains a failure grade in a course in the first attempt and repeats the same course, the grade/credit points secured by the student on repeating the course shall be counted for computation of his/her overall Credit point average though the failure grade secured by the student in the first attempt shall be shown in his/her transcript.

5.28.3 The course(s) that form the degree requirements of students are required to be passed. Many a time students also register for course(s) which are in addition to their degree requirements. Such additional courses are taken in all seriousness after full application of mind by the Student/Advisor/Dean of the college concerned. Therefore, a course once registered whether part of degree requirement or not, must be cleared through a passing grade.

5.29 GUIDELINES FOR IMPLEMENTATION OF REGULATIONS 5.24 to 5.28

5.29.1 If any course of 300 and higher series is offered in the first Semester after admission at the time of registration, the Advisor shall clearly indicate whether it is taken for credits or as non-credit course. No change in this regard shall be permissible.

5.29.2 The Postgraduate faculty should devise ways and means to review grades in Postgraduate course after the end of each Semester as is being done by other faculties.

5.29.3 Credit courses in certain majors which carry numbers in series below 300 should for the purpose of credit load of graduate student in a particular Department, who offer such courses for credits, be reconsidered and raised to 500 series or above.

5.29.4 For the purpose of calculating OCPA, the failing grade in a course will be counted for the OCPA till it is repeated after which only repeat grade will be counted.

5.30 CLASS DIVISION

No Division shall be awarded at Ph.D. level. In case of Master's degree, however, equivalent division that is 'First' or 'First Division with Distinction' or 'Second' shall be written in Brackets both in the transcript as well as in the degree certificate.

5.31 ADDITION OR WITHDRAWAL OF COURSES

5.31.1 Subsequent to his/her registration, a student may add or withdraw any course, in the manner prescribed below:

(i) Application for addition or withdrawal shall be made in the prescribed 'Change of Course(s) Form' obtainable from the office of the Dean concerned.

(ii) The Advisor of the student and the instructor of the course shall give their recommendations with reasons on the form itself.

(iii) After completing (ii) above, the student shall go to the Dean, College of Postgraduate Studies and obtain his/her approval for the change.

(iv) In the event of the permission for the change being granted by the Dean, Postgraduate Studies the student shall deposit the prescribed fee of Rs. 25/- in the office of the Comptroller and obtain a receipt thereof.

(v) After the fees as (iv) above has been deposited, the student shall deposit one copy of the 'Change of Course(s) Form' with his/her Advisor and the remaining two copies in the office of the Registrar. The Registrar shall inform the Instructors concerned through HOD about the addition or withdrawal of the course(s) by the student and shall also forward a copy of the completed 'Change of Course (s) Form' to the Dean concerned.

(vi) Until all the procedures mentioned above are completed, the change shall not become effective.

5.31.2 Course(s) may be added by a student not later than seven days from the date of registration. In exceptional cases, exemption from this rule may be given by the Vice Chancellor on the recommendation of the Dean concerned.

5.31.3 Students may withdraw any course(s) in the manner prescribed without payment of fee up to two weeks from the date of registration. The course(s) withdrawn within the prescribed period shall not be shown on the transcript.

5.31.4 Normally students shall not be permitted to withdraw from courses beyond a period of two weeks specified in Regulation(s) above. However, under special circumstances to remove genuine difficulties which may arise on account of any one or more of the following reasons, the Vice Chancellor, may on the recommendation of the Dean of the College concerned permit withdrawal of courses beyond two weeks from the date of registration up to six weeks on payment of Rs. 25/-

(i) Where a student has not been able to adjust clashes in the time-table within a period of two weeks and has to drop either of the two courses.

(ii) Change of major or minor.

(iii) Wrong advisement by an Advisor. The Advisor will submit a note to the Dean as to how the wrong advisement took place and if approved by the Dean, withdrawal from a course shall be permitted.

5.31.5 Withdrawal of courses beyond the normal date for withdrawal shall automatically result in failure grade for that course. In case of prolonged absence of a student on account of severe illness certified by the University Medical Officer, the Vice Chancellor may, on the recommendation of the Advisor and Dean PGS permit him/her to withdraw course(s) beyond two weeks from the date of registration on payment of prescribed fee.

5.32 FORMULA FOR CONVERSION OF OCPA INTO PERCENTAGE OF MARKS

The formula for conversion of the Overall Credit Point Average into aggregate percentage of marks is as given under:

Formula

Percentage of marks = OCPA × 100/10

e.g. if the OCPA is 6.00 then the percentage of marks would be

6.00 × 100/10 = 60%

5.33 RECOGNITION OF INSTITUTIONS FOR CARRYING OUT OF RESEARCH/COURSE WORK

All the Agriculture Universities, National Institutes, Deemed to be Universities, all chartered U.S. Universities and such other institutions as may be approved by the

Academic Council by name, are recognized for purposes of clause 6 of the Statutes under Chapter-XXVII reproduced below:

The course work or research for the degree and diplomas of the University may be completed at a University or some other institution approved for this purpose by the Academic Council. Where the requirement are completed at some institution other than the University, the credits so earned may be transferred to the University and counted towards the requirements for the degree or diploma concerned. Where the research has been conducted at some institution other than the University, it may be submitted as thesis to the University in partial fulfillment of the requirements for the degree or diploma concerned.

5.34 The Indian Veterinary Research Institute, Izzatnagar (Bareilly); Indian Agriculture Research Institute (IARI), New Delhi; National Dairy Research Institute (NDRI), Karnal; Central Avian Research Institute (CARI), Izzatnagar; Institute of Forestry Genetics & Tree Breeding, Coimbatore; Indian Grassland and Folder Research Institute, Jhansi; Central Food Technology Research Institute, Mysore; International Crop Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad; Himachal Pradesh Krishi Vishwavidyalaya, Palampur; all the 6 IITs; Tata Institute of Fundamental Research, Bombay; Indian Institute of Science, Bangalore; Snow and Avalanche Study Establishment (SASE)/Defence Research & Development Organization (DRDO); Regional Engineering College, Kurukshetra; and International Rice Research Institute (IRRI), Manila, Philippines are recognized for the purpose.

CHAPTER 6

REGULATIONS ON AWARD OF Ph.D. SCHOLARSHIP/FELLOWSHIP

6.1 These Regulations shall apply to the students admitted to various Ph.D. programmes through Entrance Examination.

6.2 The value of scholarship shall be revised as per the state government decision from time to time. The Board of Management shall approve it on recommendation of the Academic Council. Normally, there shall be two scholarships in each discipline. If the total number of scholarships thus provided is not utilized due to any valid reasons whatsoever, the University shall be free to redistribute the allocation of the vacant scholarship position and award the same to other student who could not be granted scholarships in the first instance due to the aforesaid restriction of two scholarships in each discipline. However, this latter award shall be based on the academic rating and shall be made after all admissions in question have been made for the Academic Year.

6.3 Application for the scholarship shall be made by the concerned student on the prescribed form obtainable from the office of the DSW and shall be submitted through Advisor, Head of the majoring Department, Dean of the college concerned, Director, Agriculture Experiment Station and the Dean, Postgraduate Studies.

6.4 The scholarship shall commence from the date of the registration of the students in the Semester of his/her admission and shall be tenable for a maximum of 36 months during Ph.D. programme of the candidate. However, the payment of scholarship for any Semester shall be made only after satisfactory performance of the student in that Semester.

6.5 Student on Academic or Conduct Probation shall not be eligible for this scholarship.

6.6 Continuance of the scholarship shall be subject to the satisfactory performance of the student concerned in academic programmes as well as his/her conduct. The scholarship may, however, be restored with effect from the date of academic performance as well as his/her conduct is rated satisfactory.

6.7 In case, the student drops a Semester or discontinues his/her studies, he/she shall loose the scholarship for that Semester. In case a student drops a Semester after studying some-time in the Semester, he/she shall loose the scholarship for the remaining part of the Semester. The scholarship may, however, be restored in such case only after the student is allowed to resume his/her studies and will be tenable for a period not exceeding a total period of 36 months.

6.8 A student awarded the scholarship will devote his/her whole time to the approved study and will not be allowed to accept any financial assistance from other agencies. In the event of award of outside scholarship, the recipient shall have to refund the amount paid to him/her by the University for the duration for which outside scholarship has been availed by him. In such cases, the scholarship may be awarded to the student next in the rating for the duration for which the outside scholarship has been availed.

6.9 The scholarship will be terminated on the date:

6.9.1 The recipient ceases to be on the roll of the University.

6.9.2 The recipient is given any punishment by the competent authority either on the recommendation of the College Disciplinary Board or on the recommendation of Disciplinary Committee. In such cases, the scholarship may be awarded to the student next in the rating.

6.10 The award of scholarship will be made by the DSW. However, the records and accounts will be handled by the Comptroller Office.

6.11 The Advisor of the concerned recipient would submit a progress report of the work through proper channel to the DSW at the end of every Semester failing which his/her scholarship will not be renewed.

6.12 The scholarship may also be terminated by the Vice Chancellor at any time without assigning any reason and in all matters not provided in these Regulations, the decision of the Vice Chancellor shall be final.

CHAPTER 7

REGULATIONS ON CONVOCATION

7.1 SPECIAL CONVOCATION PROCEDURE FOR THE HONORARY DEGREE OF THE UNIVERSITY

7.1.1 A special convocation for conferment of the Honorary Degrees of the University shall be held on such date and time as may be fixed by the Vice Chancellor.

7.1.2 The Academic Procession will be formed in the following order from the place and the time notified earlier by the Registrar for the purpose.

Registrar

Members of the Academic Council

Members of the Board of Management

Vice Chancellor

Honorary Degree Recipient(s)

Chancellor

Secretary/Principle Secretary/ADC to the Chancellor

7.1.3 The Academic Dress for the special convocation shall be the same as for the Annual Convocation, i.e., black buttoned up coat, white trousers and a hood as prescribed for the purpose. The Honorary degree Recipients shall put on the Academic Robes to which they are entitled to or the hood for the Ph.D. degree recipients of the University.

7.1.4 The Honorary Degree Recipients shall be seated on the Dias as guests.

7.1.5 The proceedings of the Special Convocation shall commence with the singing of the University song or 'Vande Matram'.

7.1.6 The Chancellor shall declare the Special Convocation open.

7.1.7 The Registrar shall read out the proposal of the University for the conferment of the Honorary Degree in the following form:

"The Board of Management of the Manyawar Shri Kanshiram Ji University of Agriculture and Technology, Banda, on the recommendation of the Academic Council and confirmation by the Chancellor, have decided to confer the Honorary Degree of DOCTOR OF SCIENCE (Honoris causa) on Mr./Ms./Dr. ……."

7.1.8 The Vice Chancellor will present the Honorary Degree Recipients to the Chancellor in the following form.

"Mr. Chancellor: I have the honour to present to you Mr./Ms./Dr. ……for conferment of the degree of DOCTOR OF SCIENCE (Honoris causa) for his/her

outstanding contribution to the objects of the University …….. (read out the citation).

I pray Mr. Chancellor that Mr./Ms./Dr. ……be honored by conferring the degree of DOCTOR OF SCIENCE (Honoris causa) of this University."

7.1.9 The Chancellor will confer the degree in the following forms:

"By virtue of the authority vested in me as Chancellor of the Manyawar Shri Kanshiram Ji University of Agriculture and Technology, Banda, I confer the honorary degree of DOCTOR OF SCIENCE (Honoris causa) on Mr./Ms./Dr. ……." (The Chancellor will decorate the recipient with hood and present the degree).

7.1.10 In case, the Honorary Degree Recipient may not be able to receive the degree in person, formal announcement for the award of the degree shall be made by the "Vice Chancellor in Annual convocation or, Special Convocation, in the following form:

"The Board of Management of the Manyawar Shri Kanshiram Ji University of Agriculture and Technology, Banda, on the recommendation of the Academic Council and confirmation by the Chancellor, have decided to confer the Honorary degree of DOCTOR OF SCIENCE (Honoris causa) on Mr./Ms./Dr. ……for his/her outstanding contribution for the objects of the University…… (read out the citation).

I pray, Mr. Chancellor, that Mr./Dr. ……be honoured by conferring the degree of DOCTOR OF SCIENCE (Honoris causa) of this University in absentia."

7.1.11 The Chancellor, will confer the degree in the following term:

"By virtue of the authority vested in me as Chancellor of the Manyawar Shri Kanshiram Ji University of Agriculture and Technology, Banda, I confer the honorary degree of DOCTOR OF SCIENCE (Honoris causa) on Mr./Ms./Dr ……..…… in absentia."

7.1.12 Speech by the Honorary Degree Recipient.

7.1.13 Observation by the Chancellor.

7.1.14 Thanks by the Registrar.

7.1.15 The Chancellor will declare the Special Convocation closed.

7.1.16 Singing of the National Anthem.

7.1.17 The Academic Procession will leave the *Pandal* and the Assembly will stand.

NOTE:- In case the Special Convocation is combined with the regular Annual Convocation, Regulations 7.1.14 to 7.1.17 will be held at the end of the Convocation.

7.2 REGULATIONS ON ANNUAL CONVOCATION

7.2.1 **Regulations on No Dues or Clearance Certificate:** Students should be required to produce a 'Clearance Certificate' within ten days of their completing the degree requirements and those who fail to do so, their names should not be recommended to the Academic Council for conferment of degrees.

7.2.2 Normally, a Convocation shall be held annually on the University Campus to confer the degrees on such date as may be fixed by the Vice Chancellor in consultation with the Chancellor and the Chief Guest, unless it is decided that in a particular year formal Convocation might not be held for reasons to be specified and the formalities for conferment of degree in absentia be completed by the Members of the Board of Management and the Academic Council in a convocation without organizing a formal function or the Convocation may not be held at all in that particular year and the degrees may be awarded at the next Convocation.

7.2.3 Every candidate for a degree must appear in person at the Convocation to receive the degree. Such candidate should inform the Registrar in writing of his/her intention to be present. No candidate shall be admitted to the Convocation who has not sent his/her name to the Registrar within the prescribed time. In exceptional cases, the Vice Chancellor may permit candidates who have not sent their names to Registrar within the prescribed time, to be admitted to the Convocation, provided their applications are received by the Registrar not later than 48 hours before the time of Convocation and are accompanied by a fine of Rs. 200/- in each case. No candidate, whose application and requisite fee is received later than 48 hours before the time of the Convocation, will be allowed to take his/her degree at the convocation.

7.2.4 Such candidates who are unable to present themselves in person at the convocation will be supplied their degree direct by the Registrar on application and on payment of a fee of Rs. 300/-.

7.2.5 Candidates must appear in the prescribed Academic Dress at the time of convocation.

7.2.6 A rehearsal shall be arranged on or before the day of Convocation at which candidates for degree must be present.

7.2.7 Registrar shall issue a notice to each recipient of a degree, intimation about of the Convocation programme and the procedure to be observed.

7.2.8 The Academic Dress for the convocation shall be a black coat with closed collar, white trouser, hood and robes as proscribed below:

7.2.8.1 For Chancellor: A hood with golden zari work.

7.2.8.2 For Chief Guest: A hood with golden and silver zari work.

7.2.8.3 For Chairperson, Board of Management & Vice Chancellor: A hood with silver zari work.

7.2.8.4 For Deans, Registrar, Members of Board of Management and Academic Council and Others: A scarlet hood.

7.2.8.5 For Honorary Degree Recipients: A hood in green colour with golden embroidery work having University Insignia in the middle.

7.2.8.6 For Bachelors degree recipients: A hood of green silk and white lining.

7.2.8.7 For Master's and Doctor's degree recipients: A scarlet red hood.

7.2.9 An UTTARIYA about 7.5″× 7″ with University Seal, 3 wheat ears and traditional motif design on the bottom shall be used being draped around the neck in different colours as per details given below.

7.2.9.1 For Chief Guest, Chancellor and Vice Chancellor: One cream silken cloth with embroidered emblem in zari as given above.

7.2.9.2 For Postgraduate students and members of the Academic Council and Board of Management: Light cream colour silk or some other cloth with the University seal and traditional motif embroidered with 3 wheat ears painted or printed in red and green colours thereon.

7.2.9.3 For Graduates: Light cream colour cloth with the University Seal and traditional motif with 3 wheat ears painted or printed in blue and green colours thereon.

7.2.9.4 In addition, to the above, head wear and gown shall also be used for Chief Guest, Chancellor, Vice Chancellor, Guest(s) of Honour, Deans, Registrar and Members of the Board of Management and other distinguished visitors attending the Academic Procession.

7.2.9.5 For girl graduation students: The Academic Dress shall be white or cream colour Sari with red border, hood and uttariya.

7.2.9.6 For female members of the Academic Council or the Board of Management: The dress shall be white or cream colour sari with red border, hood, gown and uttariya.

7.2.10 Convocation Procedure

7.2.10.1 The Chancellor, Vice Chancellor and Chairperson of the Board of Management, Members of the Board of Management, Members of the Academic Council and other distinguished guests shall assemble in the place notified for the purpose at the appointed hour and shall walk in procession in rows of two in the following order to the Convocation Hall. The procession will be led by the Registrar.

Registrar

Members of the Academic Council

Deans of Faculties and Members of the Board of Management

Distinguished Guests

Vice Chancellor and Chairman, BOM

A.D.C. (one/two)

Chancellor and Chief Guest

Secretary/Principle Secretary to the Chancellor

7.2.10.2 The Chancellor, Chairperson of the Board of Management and Vice Chancellor and Chief Guest shall be seated in the front of the dais and the members of the Board of Management and Academic Council and distinguished guests, if any, in the rear of the dais, as mentioned below:

Registrar	Vice Chancellor	Chief Guest	Chancellor	Guest(s) Honour
Members of the AC			Members of BOM	

7.2.10.3 On the procession entering the hall, the assembly shall rise and remain standing till the Chief Guest, Chancellor, Chairperson Board of Management and Vice Chancellor, distinguished guests, and members of the Academic Council and Board of management have taken their respective seats.

7.2.10.4 The Proceedings of convocation will commence with the singing of the "Vande Matram" or the "University Song". Then the Chancellor, if he/she is present, will declare the Convocation open. When the Chancellor is not present, the Vice Chancellor will declare the Convocation open.

7.2.10.5 The Vice Chancellor shall read out his/her brief report.

7.2.10.6 The Honorary Degrees, if any, shall then be presented.

7.2.10.7 The Registrar will then request the Deans of Faculties to present their students to the Chancellor/Vice Chancellor for the award of Degrees. The Deans shall present their students in the following order:

(i) Doctor of Philosophy

(ii) Master of Science

(iii) Bachelor of Science (Hons)

(a) Agriculture

(b) Horticulture

All the Presenters will stand when the Dean presents them to the Chancellor/Vice Chancellor for the Degree and will remain standing till admitted to the Degrees.

7.2.10.8 Dean will say:

"Mr. Chancellor/Vice Chancellor, I present to you candidates who have been examined and found qualified for …….. Degree to which I pray they may be admitted and on behalf of those who have been permitted to secure their Degree in Absentia, I pray that they may also be admitted thereto."

The Chancellor/Vice Chancellor will say:

"By the authority vested in me as Chancellor/Vice Chancellor of Manyawar Shri Kanshiram Ji University of Agriculture and Technology, Banda, I admit you one and all to ……..Degree and I charge you that ever in your life and activities, out prove yourselves worthy of the same. I admit the other candidates also to the Degree in Absentia."

7.2.10.9 After the distribution of Degrees is over, the Registrar shall call the recipients of University Gold Medals. They shall stand before the Chancellor/Vice Chancellor who shall present the medals.

7.2.10.10 The Chancellor/Vice Chancellor will introduce the Chief Guest and request him/her to deliver the Convocation Address.

7.2.10.11 The Chief Guest will then deliver the Convocation Address.

7.2.10.12 Thanks by the Registrar.

7.2.10.13 The Chancellor/Vice Chancellor will then declare the Convocation closed.

7.2.10.14 Singing of National Anthem.

7.2.10.15 The procession will leave the Convocation Hall in the following order and the assembly will stand.

Registrar

Secretary to the Chancellor etc.

A.D.C. (one/two)

Chancellor and Chief Guest

Vice Chancellor and Chairman BOM

Distinguished Guests

Members of the Board of Management

Deans of Faculties

Members of the Academic Council

7.3 REGULATIONS ON WEIGHT OF VARIOUS GOLD/SILVER/BRONZE MEDALS AWARDED BY THE UNIVERSITY AT THE ANNUAL CONVOCATION

The weight of various Gold/Silver/Bronze medals awarded by the University at the Annual Convocation shall be as follows:

	Medal:	**Weight**	**Name of Metal**
1.	Chancellor's Gold Medal	15 grams	Made by Silver (Gold Polish)
2.	Vice Chancellor's Gold Medal	15 grams	Made by Silver (Gold Polish)
3.	Vice Chancellor's Silver Medal	15 grams	Made by Silver (Silver Polish)
4.	Vice Chancellor's Bronze Medal	15 grams	Made by Silver (Bronze Polish)

All recipients to Gold, Silver and Bronze medals shall be awarded a certificate in addition to the medals.

7.4 REGULATIONS FOR THE AWARD OF DEGREES IN ABSENTIA IN THE JOINT MEETING OF THE BOARD OF MANAGEMENT AND THE ACADEMIC COUNCIL

7.4.1 The date of joint meeting of the Board of Management and the Academic Council shall be the date as decided by the Board of Management.

7.4.2 All the degree recipients shall be intimated by the Registrar through a letter that the degrees would be awarded without holding the formal convocation and that they should send the formal application for the same.

7.4.3 A fee of Rs. 100/- for the award of degree in absentia shall be charged from each degree recipient.

7.4.4 The detailed procedure for the joint meeting of the Board of Management and the Academic Council for conferment of degree in absentia without holding formal convocation shall be as under-

7.4.4.1 The Vice Chancellor, Members of the Board of Management and the Academic Council shall assemble in a place at the appointed time notified for the purpose.

7.4.4.2 The Vice Chancellor shall declare the joint meeting open.

7.4.4.3 The Vice Chancellor shall read out his/her report.

7.4.4.4 The Registrar shall then request the Deans of the Faculties to present the list of the degree recipients of their faculties for the award of degrees in absentia to the Vice Chancellor. The Deans shall present their list in the following order-

(i) Doctor of Philosophy

(ii) Master of Science

(iii) Bachelor of Science (Hons) : (a) Agriculture (b) Horticulture

7.4.4.5 The Dean shall say:

"Mr. Vice Chancellor, I present to you the list of candidates who have been examined and qualified for the award of……..degree to which I pray they may be admitted."

The Vice Chancellor shall say:

"By virtue of the authority vested in me as Vice Chancellor, Manyawar Shri Kanshiram Ji University of Agriculture and Technology, Banda, I admit all the candidates who have been examined and found qualified for the ……degree."

7.4.4.6 After the award of degree is over, the Registrar shall present the list of recipients of the various Gold, Silver and Bronze medals.

7.4.4.7 The Vice Chancellor shall then declare the joint meeting closed.

Prescribed format for award of B.Sc. (Hons) Agriculture Degree

ID No. . . ..

मान्यवर श्री कांशीराम जी कृषि एवं प्रौद्योगिक विश्वविद्यालय, बाँदा

MANYAWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BANDA

उत्तर प्रदेश (भारत)

UTTAR PRADESH, INDIA

LOGO

विद्वत परिषद् की संस्तुति पर

.....ना0 सं0.....जिन्होने बैचलर ऑफ साइंस (आनर्स) कृषि उपाधि हेतु निर्धारित पाठ्यक्रम वर्ष ....को मध्यमानांक.....(10 प्वांइट स्केल)/10.00 श्रेणी के साथ उत्तीर्ण किया, को उक्त उपाधि प्रदान की गयी।

On the recommendation of the Academic Council

……...……ID No..……..……. having completed the prescribed requirements for the **Bachelor of Science (Hons) Agriculture** has been admitted to the said degree on this ……..day of……..……two thousand……with Overall Credit Point Average (OCPA) of……/10.00 (Division ……)

कुलसचिव

Registrar

कुलपति

Vice Chancellor

Prescribed format for award of B.Sc. (Hons) Horticulture Degree

ID No .....

मान्यवर श्री कांशीराम जी कृषि एवं प्रौद्योगिक विश्वविद्यालय, बाँदा

MANYAWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BANDA

उत्तर प्रदेश (भारत)

UTTAR PRADESH, INDIA

LOGO

विद्वत परिषद् की संस्तुति पर

.....ना0 सं0.....

...जिन्होने बैचलर ऑफ साइंस (आनर्स) उद्यान उपाधि हेतु निर्धारित पाठ्यक्रम .....

.....में पूरा किया, को उक्त उपाधि आज दिनांक .....को प्रदान की गयी।

मध्यमानांक ..... / 10.00 (श्रेणी) .....

On the recommendation of the Academic Council

…….ID No……...……...…...…….... having completed the prescribed requirements for the **Bachelor of Science (Hons) Horticulture** has been admitted to the said degree on this ……..day of……..……two thousand……with Overall Credit Point Average (OCPA) of……./10.00 (Division ……)

कुलसचिव

Registrar

कुलपति

Vice Chancellor

Prescribed format for award of Master of Science Degree

ID No. . . ..

मान्यवर श्री कांशीराम जी कृषि एवं प्रौद्योगिक विश्वविद्यालय, बाँदा

MANYAWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BANDA

उत्तर प्रदेश (भारत)

UTTAR PRADESH, INDIA

LOGO

विद्वत् परिषद् की संस्तुति पर

.....ना0 सं0 .....

..जिन्होने मास्टर ऑफ साइंस हेतु निर्धारित पाठ्यक्रम .....

.में पूरा किया, को उक्त उपाधि आज दिनांक .....को प्रदान की गयी।

मध्यमानांक ...../10.00 (श्रेणी) .....

On the recommendation of the Academic Council

…….ID No……..…….……..... having completed the prescribed requirements for the **Master of Science** in …….……has been admitted to the said degree on this ……..day of…….two thousand……with Overall Credit Point Average (OCPA) of……./10.00 (Division……)

कुलसचिव
Registrar

कुलपति
Vice Chancellor

Prescribed format for award of Doctor of Philosophy Degree

ID No. . . ..

मान्यवर श्री कांशीराम जी कृषि एवं प्रौद्योगिक विश्वविद्यालय, बाँदा

MANYAWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BANDA

उत्तर प्रदेश (भारत)

UTTAR PRADESH, INDIA

LOGO

विद्वत परिषद् की संस्तुति पर

.....ना0 सं0 .....

.....जिन्होने डॉक्टर ऑफ फिलॉसफी हेतु निर्धारित पाठ्यक्रम .....

.....में पूरा किया, को उक्त उपाधि आज दिनांक .....

को प्रदान की गयी।

मध्यमानांक ..... / 10.00 (श्रेणी) .....

On the recommendation of the Academic Council

…….ID No.…….…….. having completed the prescribed requirements for the **Doctor of Philosophy** in ……has been admitted to the said degree on this ……day of ……two thousand…….….with Overall Credit Point Average (OCPA) of ……./10.00 (Division ……)

कुलसचिव — कुलपति

Registrar — **Vice Chancellor**

Prescribed format for award of Doctor of Science (Honoris causa) Degree

ID No.....

मान्यवर श्री कांशीराम जी कृषि एवं प्रौद्योगिक विश्वविद्यालय, बाँदा

MANYAWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BANDA

उत्तर प्रदेश (भारत)

UTTAR PRADESH, INDIA

LOGO

की प्रबन्ध परिषद

व

विद्वत् परिषद् की संस्तुति पर

श्री / श्रीमती / डा0 .....को

विज्ञान वारिधि की मानद उपाधि

आज दिनांक .....20 ..... को प्रदान करता है।

The Board of Management, on the recommendation of the

Academic Council, confers the Degree of

DOCTOR OF SCIENCE (HONORIS CAUSA)

Mr./Ms./Dr.

……..……..……on this ……..day of two thousand……..

कुलपति **कुलाधिपति**

Vice Chancellor **Chancellor**

CHAPTER 8

REGULATIONS ON COURSE CURRICULUM

Based on the recommendations of Indian Council of Agricultural Research (ICAR), through its "Report of Fourth Deans' Committee on Agricultural Education in India (2008)", the names and numbers of Departments in College of Agriculture and College of Horticulture, and the Course Curriculum for B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture degree programmes have been adopted and implemented in the University.

8.1 DEPARTMENTS OF COLLEGE OF AGRICULTURE AND COLLEGE OF HORTICULTURE

8.1.1 College of Agriculture

8.1.1.1 Agronomy
8.1.1.2 Plant Breeding and Genetics
8.1.1.3 Soil Science and Agricultural Chemistry
8.1.1.4 Entomology
8.1.1.5 Agricultural Economics
8.1.1.6 Agricultural Engineering
8.1.1.7 Plant Pathology
8.1.1.8 Agricultural Extension
8.1.1.9 Crop Physiology
8.1.1.10 Statistics and Social Science

NOTE 1:- In Fourth Deans' Committee Report, 'Department of Horticulture and Forestry' is listed in College of Agriculture (COA). However, College of Horticulture (COH) is established separately in the University where faculty will be available for teaching of courses of Horticulture and Forestry to the students of COA also. Therefore, 'Department of Horticulture and Forestry' in not required in COA.

NOTE 2:- In Fourth Deans' Committee Report, 'Department of Biochemistry/Physiology/Microbiology' is listed in COA. However, COH has a 'Department of Basic Sciences and Humanities', which includes disciplines of Biochemistry and Microbiology. Therefore, only 'Department of Crop Physiology' is listed in COA.

8.1.2 College of Horticulture

8.1.2.1 Fruit Science
8.1.2.2 Vegetable Science
8.1.2.3 Post Harvest Technology
8.1.2.4 Floriculture and Landscaping
8.1.2.5 Natural Resource Management
8.1.2.6 Basic Sciences and Humanities

NOTE 1:- The 'Department of Natural Resource Management' includes disciplines such as Environmental Science, Agrometreology, Forestry, etc.

NOTE 2:- The 'Department of Basic Sciences and Humanities' includes disciplines such as Chemistry, Biochemistry, Microbiology, Biology, Physics, English, etc.

NOTE 3:- In Fourth Deans' Committee Report, 'Department of Plant Protection' is listed in COH. However, 'Department of Entomology' and 'Department of Plant Pathology' are established in COA where faculty is available for teaching of courses of Plant Protection to the students of COH also. Therefore 'Department of Plant Protection' is not required in COH.

NOTE 4:- In Fourth Deans' Committee Report, 'Department of Spices and Plantation Crops; is listed in COH established in the regions where Spices and Plantation Crops are the major crops. However, this Department is not required in MSKJUAT as Spices and Plantation Crops are not major crops in Bundelkhand region.

8.2 COURSE CURRICULUM

Each course will be identified by Course Abbreviation, Number and Credit Hours as explained below.

8.2.1 Abbreviations of Courses

Abbreviations of Courses offered by various Departments/Disciplines in each College are given below.

S.No.	College	Department/Discipline	Abbreviation of Courses
1	**College of Agriculture**	Agronomy	AGRON
		Plant Breeding and Genetics	PBG
		Soil Science and Agricultural Chemistry	SOILS
		Entomology	ENT
		Agricultural Economics	ECON
		Agricultural Engineering • Farm Power and machinery • Soil Water Conservation and Engineering	 FPM SWE
		Plant Pathology	PL PATH
		Agricultural Extension	EXT
		Crop Physiology and Botany	BOT
		Statistics and Social Science	STAT
	Other Disciplines	Livestock Production and Management	LPM
		Rural Agriculture Work Experience	RAWE
		Computer Applications	CSE

		English	ENG
		Physical Education	NSO
		Agrometreology	AGROMET
2	**College of Horticulture**	Fruit Science	FRUIT SC
		Vegetable Science	VEG
		Floriculture and Landscaping	FLORI
		Post Harvest Technology	PHT
		Biochemistry and Microbiology • Biochemistry • Microbiology	 BIOCHEM MICRO
	Other Disciplines	Forestry	FOREST
		Rural Horticulture Work Experience	RHWE
		Natural Resource Management	NRM
		Environmental Science	ENV
		Agrometreology	AGROMET

8.2.2 Numbers of Courses

Numbers will be allotted to courses for B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture degree programmes on the basis of name of subject and the study-year of the programme in which the course is to be offered. For numbering of UG and PG courses, 100, 200, 300, 400, 500, 600 and 700 series will be followed. For example, 'AGRON 101' is a number allotted to the first course generally offered by Agronomy Department for the students of 1st year of UG programme in COA. Next number for a course in Agronomy will be 'AGRON 102' and so on for the courses to be offered in first study-year. Similarly, course numbers 'AGRON 201, 202, 203…….' will be for the courses of Agronomy to be offered in second study-year; 'AGRON 301, 302…..' for third study-year and 'AGRON 401, 402…..' for courses in final study-year of UG programme. The course numbers for Masters and Ph.D. programmes will be, e.g. 'AGRON 501, 502……'and 'AGRON 601, 602…..', respectively.

8.2.3 Course Credits

Each course shall be given a certain number of credit hours in accordance with the amount of work, which the student does in the class room, laboratory, and outside field study. One credit is defined as the lecture of 50 minutes (one period) duration or minimum of two-periods practical (100 minutes) or three-periods of field work per week. For example, for a Course of 03 Credit Hours (two Credit Hours of theory and one of practicals), 02 periods for theory and 02 periods for practicals are required per week. However, for such courses where field work is required, one credit requires 3 periods of practical work.

As explained above, each course will be labeled with both Course and Credit Hours. For example, the first course of Agronomy of three credits having theory (2 credits) and practical/field work (1credit) will be labeled as 'AGRON 101' of 3 (2+1) credits.

8.2.4 Semester-wise Courses

The Summary sheet and Semester-wise distribution of courses for B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture degree programmes are listed below. However, taking into account the availability of teaching laboratories, field facilities and teachers of different disciplines as well as total credit-hours load for a class. the course(s) listed in any semester could be deferred/shifted with the approval of Vice Chancellor or any other officer authorized by him/her. If a course has been deferred/ left out in a semester due to unavoidable circumstances as stated above, the left out course will be offered in a earliest possible succeeding semester.

8.2.4.1 **B.Sc. (Hons) Agriculture Degree Programme**

(i) **Summary sheet of Courses and Credit Hours**

S. No.	Details	Minimum Credit Hours recommended by ICAR Fourth Deans' Committee	Approved by Board of Management
1	Total credit hours for three years (I-VI Semester)	123 (79+44)	123 (77+46)
2	Total non-credit hours for three years (I-VI Semester)	3 (01+02)	3 (01+02)
3	Average credit hours per semester	20.5	20.5
4	Total number of core Courses	49 + NC 02	49 +NC 02
5	Multi disciplinary Courses in area of Electives Total credit hours (Semester VII)	 20	 20
6	Average number of Courses per semester	8	8
7	RAWE (Semester VIII)	20 weeks	20 weeks

(ii) **Semester-wise Distribution of Courses (Semester – I to VIII)**

Course No.	Course Title	Credit Hours (Theory + Practical)
1st Semester		
AGRON 101	Introductory Agriculture (Ancient, Heritage, Agricultural Scenario and Gender Equity in Agriculture)	1(1+0)
AGROMET 101	Principles of Agricultural Meteorology	3(2+1)
ENG 101	Structural Grammar and Spoken English (NC)	2(1+1)
FRUIT SC 101	Fundamentals of Horticulture	3(2+1)
PBG 101	Principles of Genetics and Cytogenetics	3(2+1)
PL PATH 101	Plant Pathogens and Principles of Plant Pathology	4(3+1)

SOILS 101	Introduction to Soil Science	3(2+1)
SWE 101	Fundamentals of Soil and Water Conservation Engineering	3(2+1)
	Total	**20(14+6) + NC 2**
2nd Semester		
AGRON 102	Water management Including Micro Irrigation	3(2+1)
CSE 101	Introduction to Computer Applications	2(1+1)
ECON 101	Principles of Agricultural Economics	2(2+0)
EXT 101	Dimensions of Agricultural Extension	2(1+1)
MICRO 101	Agricultural Microbiology	3(2+1)
NSO 101	Physical Education (NC)	1(0+1)
PBG 102	Principles of Seed Technology	3(2+1)
PL PATH 102	Introductory Nematology	2(1+1)
SOILS 102	Soil Chemistry, Soil Fertility and Nutrient Management	3(2+1)
	Total	**20(13+7) + NC 1**
3rd Semester		
AGRON 201	Field Crops-I *(Kharif Season)*	3(2+1)
AGRON 202	Organic Farming	3(2+1)
BOT 201	Crop Physiology	3(2+1)
ECON 201	Agricultural Finance and Cooperation	2(1+1)
ENT 201	Insect Morphology and Systematics	3(2+1)
FPM 201	Farm Power and Machinery	2(1+1)
PBG 201	Principles of Plant Breeding	3(2+1)
VEG 201	Production Technology of Vegetables and Flowers	3(2+1)
	Total	**22(14+8)**
4th Semester		
AGRON 203	Field crops-II *(Rabi Season)*	3(2+1)
ECON 202	Agricultural Marketing, Trade and Prices	2(1+1)
ENT 202	Insect Ecology and Integrated Pest Management including Beneficial Insects	3(2+1)
FRUIT SC 201	Production Technology of Spice, Aromatic, Medicinal and Plantation Crops	3(2+1)
PL PATH 201	Diseases of Field Crops and their Management	3(2+1)
PBG 202	Breeding of Field and Horticultural Crops	3(2+1)
SOILS 201	Manures, Fertilizers and Agro-Chemicals	3(2+1)
SWE 201	Protected Cultivation and Postharvest Technology	2(1+1)
	Total	**22(14+8)**
5th Semester		
AGRON 301	Practical Crop Production-I (*Kharif Crops*)	1(0+1)

ECON 301	Fundamentals of Agribusiness Management (including Project Development, Appraisal and Monitoring)	2(1+1)
ENT 301	Crop Pests and Stored Grain Pests and their Management	3(2+1)
EXT 301	Fundamentals of Rural Sociology and Educational Psychology	2(2+0)
FRUIT SC 303	Postharvest Management and Value Addition of Fruits and Vegetables	2(1+1)
LPM 301	Livestock Production and Management	3(2+1)
PBG 301	Principles of Plant Biotechnology	3(2+1)
PL PATH 202	Diseases of Fruit, Plantation, Medicinal and Aromatic Crops	3(2+1)
STAT 301	Elementary Statistics	2(1+1)
	Total	**21(13+8)**
6th Semester		
AGRON 302	Practical Crop Production-II (*Rabi Crops*)	1(0+1)
AGRON 303	Weed Management in Field and Horticultural Crops	2(1+1)
BIOCHEM 301	Elementary Plant Biochemistry and Biotechnology	3(2+1)
ECON 302	Production Economics and Farm Management	2(1+1)
FPM 301	Renewable Energy	2(1+1)
EXT 302	Extension Methodologies for Transfer of Agricultural Technology	2(1+1)
EXT 303	Entrepreneurship Development and Communication Skills	2(1+1)
PHT 301	Fundamentals of Food Technology	2(1+1)
ENV 301	Environmental Science	2(1+1)
	Total	**18 (9+9)**
7th Semester		
	Students will be allocated one area of the following four Electives	
	1. Crop Production	
AGRON 401	Seed Production Technology	3(1+2)
AGRON 402	Integrated Farming Systems and Sustainable Agriculture	3(1+2)
AGRON 403	Water Management (Watershed, Micro Irrigation, Problematic Water)	4(1+3)
SOILS 401	Soil Management (Conservation, Problematic Soil, Soil Quality)	4(1+3)
SOILS 402	Remote Sensing, GIS and Land use Planning	3(1+2)
FOREST 401	Production Technology of Economic Forest Trees	3(1+2)
	Total	**20 (6+14)**

	2. Crop Protection	
ENT 401	Beekeeping	3(1+2)
ENT 402	Bio-control, Bio-Pesticides and Integrated Pest Management	4(2+2)
ENT 403	Pesticides and Plant Protection Equipment	3(1+2)
PL PATH 401	Bio-control and Integrated Disease Management	3(1+2)
PL PATH 402	Mushroom Cultivation	2(0+2)
PL PATH 403	Plant Disease Diagnoses	2(0+2)
PL PATH 404	Postharvest Diseases and their Management	3(2+1)
	Total	**20(7+13)**
	3. Horticulture	
FRUIT SC 401	Commercial Fruit Production	3(1+2)
FRUIT SC 402	Nursery Management of Horticultural Crops	4(1+3)
FRUIT SC 403	Processing and Value Addition of Horticultural Crops	3(1+2)
VEG 401	Commercial Vegetable Production	3(1+2)
VEG 402	Protected Cultivation of Horticultural Crops and Seed Production of Vegetables	4(1+3)
FLORI 401	Commercial Floriculture	3(1+2)
	Total	**20(6+14)**
	4. Plant Breeding and Genetics	
PBG 401	Principals and Procedures of Plant Tissue Culture and Transformation	3(2+1)
PBG 402	Principals and Procedures of Molecular Biotechnology & Genomics	4(2+2)
PBG 403	Genetics of Crop Plants	3(2+1)
PBG 404	Cytogenetics of Crop Plants	3(2+1)
PBG 405	Theory and Practices of Plant Breeding	4(3+1)
PBG 406	Crop Experimentation	3(2+1)
	Total	**20 (13+7)**

8th Semester		
	RAWE Model II Experimental Learning (20 weeks period)	
Period	**Activity**	**Remarks**
1 week	Orientation	One day for each elective 1. Agronomy, Soil Science, Agroforestry 2. Crop Protection/ Extension Education 3. Horticulture 4. Plant Breeding & Genetics
2 weeks 4 weeks	Village Attachment (Coordinator-HOD Extension Education) Elective wise Off–Campus Training (Details given below)	Students will be divided into groups of 10-15 students each. Students will attend 4 weeks training in different activities (Elective-wise)
12 weeks	Off–Campus Training 1. Seed Industries and Company/ Fertilizer Industries 2. Pesticide Industries/Agri Clinic, Plant Health Clinic/Farmer Service Centre/Communication Centre/KGK/KVK Research Station 3. Biotechnological Industries (Tissue Culture Labs) 4. Biopesticide-Industries/ Sericulture Units 5. Commercially Nurseries/ Landscaping Units 6. Food Processing and Preservation Unit 7. Agriculture Finance/ Banks/Credits Societies, etc. 8. Agro–based NGO (Non Government Organization)	Students will be divided into groups and each group will participate in each activity for two weeks in rotation.
1 week	On-Campus	Report Preparation, Submission and Evaluation

Details of Elective-wise Off–Campus Training (4 weeks period)

Sl. No	Elective	Department (s)	Training Activities
1	Crop Production	Agronomy Soil Science Forestry	1.Seed Industries/ Companies 2. Chemical and Bio - Fertilizer Industries 3. Mineral Mines in U.P. 4. Essential Oil Distillation Plants 5. Herbicide Formulations 6.Cereals, Oil and Pulses Processing Units 7. Plywood Industries 8.Hi-Tech Industry for Plant Propagation
2	Crop Protection	Entomology, Plant Pathology	1. Pesticide Industries 2.Bio-Pesticide Industries 3. Sericulture 4.KVK/KGK/ Research Station 5. Virus -free Potato Tuber Production Units 6. Commercial Honey Production Units
3	Horticulture	Horticulture Vegetable and Floriculture	1. Commercial Nursery- Fruits, Vegtables and Flower Crops 2.Vegetable/Flower/Seed Production and Landscaping Units 3.Flower Shops/Markets/Centres 4. Fruit /Vegetables Station and Institute of Agriculture (U.P.)
4	Plant Breeding and Genetics		1. Biotechnological Industries (Tissue Culture Labs) 2. Hybrid Seed Production Units near the University- Private or Government. 3.Tissue Culture Labs

8.2.4.2 **B.Sc. (Hons) Horticulture Degree Programme**

(i) **Summary Sheet of Courses and Credit Hours**

S.No	Details	Minimum Credit Hours. Recommended by ICAR Fourth Deans' Committee	Approved by Board of Management
1	Total credit hours for three years (I-VI Semester)	123 (79+44)	124 (74+50)
2	Total non-credit hours for three years (I-VI Semester)	3 (01+02)	3 (01+02)
3	Average credit hours per semester	20.5	20.7
4	Total number of core Courses	49 + NC 02	51 +NC 02
5	Rural Horticulture Work Experience (RHWE) (Semester VII)	20	20
6	Average number of Courses per semester	8	8
7	Experiential Learning (Semester VIII)	20	20

(ii) **Semester-wise Distribution of Courses (Semester – I to VIII)**

Course No.	Course Title	Credit Hours (Theory + Practical)
1st Semester		
CSE 101	Introduction to Computer Applications	2(1+1)
ENG 101	Structural Grammar and Spoken English (NC)	2(1+1)
FLORI 101	Principles of Landscape Gardening	1(0+1)
FRUIT SC 101	Fundamentals of Horticulture	3(2+1)
FRUIT SC 102	Plant Propagation and Nursery Management	2(1+1)
MICRO 101	Agricultural Microbiology	3(2+1)
PBG 101	Principles of Genetics and Cytogenetics	3(2+1)
SOILS 101	Introduction to Soil Science	3(2+1)
VEG 101	Temperate Vegetables	2(1+1)
	Total	**19(11+8) + NC 2**

2nd Semester		
BOT 101	Introductory Crop Physiology	2(1+1)
ECON 101	Principles of Agricultural Economics	2(2+0)
EXT 101	Dimensions of Agricultural Extension	2(1+1)
FRUIT SC 103	Tropical and Subtropical Fruits	3(2+1)
FRUIT SC 104	Water Management in Horticultural Crops	2(1+1)
NSO 101	Physical Education (NC)	1(0+1)
PBG 201	Principles of Plant Breeding	3(2+1)
SOILS 102	Soil Chemistry, Soil Fertility and Nutrient Management	3(2+1)
VEG 102	Tropical and Subtropical Vegetables	3(2+1)
	Total	**20(13+7) + NC 1**
3rd Semester		
AGRON 303	Weed Management in Field and Horticultural Crops	2(1+1)
BOT 202	Growth and Development of Horticultural Crops	2(1+1)
ENT 201	Insect Morphology and Systematics	3(2+1)
FLORI 201	Introduction to Floriculture	3(2+1)
FPM 201	Farm Power and Machinery	2(1+1)
FRUIT SC 202	Temperate Fruits	2(1+1)
PL PATH 101	Plant Pathogens and Principles of Plant Pathology	4(3+1)
PL PATH 202	Diseases of Fruit, Plantation, Medicinal and Aromatic Crops	3(2+1)
	Total	**21(13+8)**
4th Semester		
BIOCHEM 301	Elementary Plant Biochemistry and Biotechnology	3(2+1)
ENT 203	Insect Pests of Fruit, Plantation, Medicinal and Aromatic Crops	3(2+1)
FLORI 202	Ornamental Horticulture	3(2+1)
FRUIT SC 203	Plantation Crops, Spices and Condiments	3(2+1)
FRUIT SC 204	Breeding of Fruit and Plantation Crops	3(2+1)
FRUIT SC 205	Orchard Management	2(1+1)
PL PATH 203	Nematode Pests of Horticultural Crops and their Management	2(1+1)
SOILS 202	Soil and Plant Analysis	1(0+1)
SWE 201	Protected Cultivation and Postharvest Technology	2(1+1)
	Total	**22(13+10)**
5th Semester		
AGRON 202	Organic Farming	3(2+1)
AGRON 304	Introduction to Major Field Crops	2(1+1)

FOREST 301	Introductory Agroforestry	2(1+1)
FRUIT SC 301	Medicinal and Aromatic Crops	3(2+1)
FRUIT SC 303	Postharvest Management and Value Addition of Fruits and Vegetables	2(1+1)
PHT 301	Fundamentals of Food Technology	2(1+1)
PL PATH 301	Diseases of Vegetable, Ornamental and Spice Crops	3(2+1)
STAT 301	Elementary Statistics	2(1+1)
VEG 301	Breeding of Vegetable, Tuber and Spice Crops	3(2+1)
	Total	**22(13+9)**
6th Semester		
ENT 302	Insect Pests of Vegetable, Ornamental and Spice Crops	3(2+1)
ENT 303	Apiculture	1(0+1)
EXT 303	Entrepreneurship Development and Communication Skills	2(1+1)
FLORI 301	Breeding and Seed Production of Ornamental Crops	3(2+1)
FRUIT SC 302	Horti-Business Management	2(2+0)
ENV 301	Environmental Science	2(1+1)
PL PATH 302	Mushroom Culture	1(0+1)
PHT 302	Processing of Horticultural Crops	3(1+2)
VEG 302	Seed Production of Vegetable, Tuber and Spice Crops	3(2+1)
	Total	**20(11+9)**
7th Semester		
Rural Horticulture Work Experience (RHWE)		
RHWE 401	Project Formulation, Economics, Banking, Financial and Institutional Management	4(0+4)
RHWE 402	Registration, Certification, Quality Control and Assurance	3(0+3)
RHWE 403	Procurement of Raw Materials, Packaging, Sale Promotion Marketing, Postharvest Management and Linkage with other Institutions	4(0+4)
RHWE 404	Cultural/Commercial Management Techniques of Plant Nursery, Postharvest Management Units High Value Horticultural Crops including Flowers, Medicinal and Aromatic Plants	4(0+4)
RHWE 405	Research Station /KVK/KGK/ICAR Institutions Activities and attachment to Horti-based Institution	3(0+3)
RHWE 406	Introduction to Agrometrology Agro meteorological Observatory. Measurement of temperature, rainfall, Evaporation, atmospheric pressure, sunshine duration, solar radiation, wind direction, wind speed and relative humidity. Study of weather forecasting and synoptic charts. Processing, presentation and interpretation of climatic data in relation to crops Introduction to GIS and GPS. Application of Remote Sensing Techniques- in horticultural crops	2(0+2)
	Total	**20 (0+20)**
8th Semester		
	Experiential Learning (20 Weeks)	
FRUIT SC 404	Experiential Learning in Nursery Production and Management	10(0+10)
FLORI 402	Experiential Learning in Floriculture and Landscape Gardening	10(0+10)
	Total	**20 (0+20)**

CHAPTER 9

RULES AND REGULATIONS ON STUDY LEAVE

Regular Teachers including Professor, Associate Professor and Assistant Professor shall be entitled to study leave for Research leading to Ph.D. degree or other Postgraduate studies/trainings subject to the following conditions:

9.1

9.1.1 Where a teacher is nominated/sponsored and sent by the University on study leave under QIP/FIP programme or equivalent and the Government of India, Indian Council of Agriculture Research/University Grants Commission or any other outside agency undertakes to pay for the salary and allowances of the substitute to be appointed during the period of study leave, or the Department concerned undertakes that they can spare the teacher concerned for the study under QIP/FIP without any substitute, the incumbent proceeding on study leave is allowed any scholarship/fellowship or any other emoluments like travel grant etc. by any outside agency during the period of study leave, he/she shall be allowed to avail the same in addition to the full salary and dearness allowance paid by the University. It is restricted to two staff members from one college/Directorate for the year.

9.1.2 In case a teacher, as defined in Section 2(k) of the Uttar Pradesh Agriculture University Act, is nominated or sponsored by the Vice Chancellor for prosecuting a Postgraduate course of study directly related to the sphere of his/her duty and it is certified that the course of study shall enable the teacher to keep abreast with modern developments in the field of his/her work and thereby improve his/her competence and usefulness to the University, he/she may be granted leave with full pay and dearness allowance.

9.1.3 In case where a teacher has, with the permission of the Vice Chancellor, obtained a fellowship/scholarship from any outside agency on his/her own initiative and has not specifically been nominated and sponsored by the University under QIP/FIP programme under Regulation 9.1.1 or 9.1.2 above, he/she shall be paid by the University the difference between the salary plus dearness allowance admissible to him/her and the scholarship/fellowship amount allowed to him/her by the outside agency. The incumbent may also avail of earned leave on full pay due to him/her at his/her option and in that case, difference as indicated above will not be payable to him/her for the period of earned leave as per the University Rules with the approval of the competent authority.

9.1.4 If the case is not covered under Regulations 9.1.1 to 9.1.3 above, the teacher shall be allowed earned leave on full pay due to him/her and the remaining period of study leave will be allowed on half pay plus dearness allowance admissible thereon as per University Rules.

9.1.5 The University staff teaching/non-teaching may be permitted for higher studies from other University on part time/full time as per need of the course preferably on course programme system and as per University Rules on the approval of the Vice Chancellor or under Regulations 9.1.1 to 9.1.4 above.

9.1.6 The permission would be granted subject to the course programme taught in the University. For the course programme, which are not being taught in the University, out-side permission may be granted to the staff.

9.2 The period of study leave shall be 02 years, which can be extended up to 03 years under exceptional circumstances.

9.3 He/she should have at least seven years to retirement.

9.4 In the case of teachers nominated/sponsored for a Postgraduate course of study in the interest of the University, in an institution in a foreign country, the person concerned shall be allowed to avail of such scholarship/fellowship etc. as may be granted to him/her by the institution/agency offering the course of study.

9.5 No teacher shall be entitled to study leave as a matter of right. Leave will be sanctioned at the discretion of the Vice Chancellor keeping in view the teaching, research and extension responsibilities of the Department of the applicant and the implications of leave in the light of availability of adequate and appropriate personnel to meet the requirements of the University.

9.6 Applications for grant of study leave shall be made by the teacher concerned to the Vice Chancellor at least 03 months before the date on which he/she intends to avail of such leave, furnishing the following details in this application:

9.6.1 The course(s) of study which is/are contemplated with detailed programme;

9.6.2 Full particulars of financial assistance relating to scholarship/fellowship/ assistantship/travel grant/salary of payment of salary etc. or substitute by outside agency etc., if any, that are likely to be received or paid by Government or outside agency with all relevant details.

9.6.3 The incumbent shall also submit a copy of his/her application simultaneously to the Head of Department, who shall forward the same to the Vice Chancellor through Dean concerned/Registrar with his/her recommendations. The Dean will also record his/her recommendations thereon and then send the same to the Vice Chancellor with the detailed proposals about arrangement of work during the proposed study leave.

9.6.4 The Vice Chancellor may refer the application to a suitable committee for opinion if he/she considers it necessary and/or he/she may sanction the leave at his/her own discretion.

9.7 Where the University pays full salary or difference of salary, such payment shall be subject to a half yearly satisfactory report from the supervisor/tutor/teacher under whom the incumbent is availing the study leave for higher qualification/study/research. In case such progress report is not received or the progress report is unsatisfactory, the study leave may be cancelled and the incumbent shall then have to resume duties immediately. No

application for study leave shall be entertained from such an incumbent during rest of the period of service.

9.8 The incumbent granted study leave as above shall be required to execute a bond before proceeding on study leave to serve the University on return from the study leave, for a period of at least 03 years in case he/she is granted study leave, for a period of one year, and a bond to serve the University for at least 05 years in case he/she is granted study leave for more than one year. In case, the incumbent fails to serve the University for the period stipulated in the bond, he/she shall be required to pay the University a sum equal to the amount paid to him/her by the University during the study leave period plus liquidated damages, as determined by the Vice Chancellor, caused to the University. For purposes of satisfying the conditions of the bond, the incumbent may be required to submit a fidelity bond of a National General Insurance Company for the amount as may be determined by the Vice Chancellor or he/she may file bond executed by two sureties undertaking to make good the amount that may be determined by the Vice Chancellor on the above account, subject to the condition that the sureties shall be permanent teachers of the University.

9.9 Normal annual increments will continue to accrue to the incumbent during the period of study leave.

9.10 The incumbent shall be allowed to continue to contribute towards the University Provident Fund (if applicable) during the period of his/her study leave as permissible under the University Rules as if he/she was drawing full salary. The University contribution will also be made provided if he/she contributes his/her due share.

9.11 No teacher shall be allowed study leave more than twice throughout his/her service, subject to the provision that the aggregate period of study leave shall not exceed three years.

9.12 Study leave shall be admissible to regular teachers only after having rendered a minimum continuous service of three years as a teacher in the University.

9.13 The maximum number of staff candidates from University Departments who may be permitted by Vice Chancellor to undergo higher studies on the recommendation of the Head of the Department and the Dean of the college concerned/Registrar shall be as follows.

9.13.1 10% of the total strength of a Department at a time for full-time study.

9.13.2 20% of the total strength of a Department at a time for part-time study.

CHAPTER 10

REGULATIONS ON MAINTENANCE OF STUDENTS' RECORD

The following procedure shall be adopted for maintenance of the students' record:

10.1 The "Live and closed" filing system should be introduced for students' records. The name of the student who is registered with the University should be on the file. After he/she has completed the course and left the University, his/her file should be closed and kept in the record room. If any student leaves the University, in the middle, his/her file should temporarily be consigned to the record room and requisitioned from there whenever needed in future. An up-to-date list of "Live & Closed" files should always be readily available.

10.2 It may be ensured that every student's file should have an index at the beginning to facilitate prompt location of any particular paper kept in the file.

10.3 All students' files should be checked regularly and required formalities should be completed without waiting for the students to come and remind the office at the nick of time.

10.4 A consolidated statement showing the important documents such as registration cards, results etc. which are not available in individual student's record file be prepared and a copy of which may be sent to the Dean/Director concerned and the records to be completed.

10.5 Complete information as to how many students have registered and how many students have graduated Semester-wise should be readily available.

10.6 Migration Certificate shall not be asked from the candidates who join the University after completing the qualifying Examination from the institution/University which does not issue Migration Certificate or from the candidates who passed the qualifying Examination from foreign Universities.

10.7 The original documents, certificates, testimonials etc of each student along with a photocopy duly verified and attested by Registrar, shall be scanned and their soft copy in the form of DVD shall be kept in the office of Registrar and concerned Dean.

CHAPTER 11

REGULATIONS ON ISSUING OF DOCUMENTS TO THE STUDENTS

11.1 All the students who are admitted to the University shall be required to submit copies of the following documents:

11.1.1 Attested Copies of mark sheets and Certificates for all educational qualifications starting from High school or equivalent to the qualifying Examination.

11.1.2 Character Certificate and Transfer Certificate/Migration Certificate (in original) from last institution attended.

11.1.3 Certificate for utilizing the intervening period, if any, after leaving the last institution.

11.1.4 Five Passport size copies of recent photograph.

11.1.5 Any other certificate as may be prescribed.

11.2 The office of the Registrar will issue the following documents as per the procedure outlined below:

11.2.1 Semester Report Card

11.2.2 Bonafide Certificate

11.2.3 Degree/Course Completion Certificate

11.2.4 Provisional Degree Certificate

11.2.5 Transcript

11.2.6 Migration Certificate

11.2.7 Character Certificate

11.2.8 Degree

If any student requires any other type of certificate or signature on some forms, the same may also be issued by the office of Registrar if, considered necessary.

11.3 No documents shall be issued to students unless the required documents detailed here under are submitted by them:

11.3.1 **Semester Performance Report:** It may be issued without insisting any earlier document because registration in subsequent Semester is involved.

11.3.2 **Bonafide Certificate:** On submission of TC/Migration Certificate (in original), Mark Sheet of qualifying Examination and 5 copies of photographs unless not submitted.

11.3.3 **Degree Completion Certificate, Course Completion Certificate, Thesis Submission Certificate, Character Certificate and incomplete Transcript:** On submission of documents at serial no. 2 above, mark sheets of earlier

Examinations, two point character certificate, gap certificate (if any) and up to date No Dues Certificate from the Comptroller.

11.3.4 **Complete PDC and Character Certificate:** To be issued on submission of documents listed in Regulations 11.2 and 11.3 above plus all copies of certificates/degrees and final no dues certificate. In case any certificate/degree is lacking, he/she will give an undertaking to submit the same later.

11.3.5 **Transcript/Migration Certificate:** As above, except if some certificate is lacking about Examination that he/she passed or he/she should ensure that it has not been issued to him.

11.3.6 **Degree:** Only on submission of all documents.

11.4 Character Certificate with satisfactory conduct may be issued to those students who are awarded the punishment of temporary dismissal only once during the period of their stay in the University, if the same is recommended by the Disciplinary Committee and approved by the Academic Council.

11.5 In case of foreign students, in whose cases the institutions last attended i.e. University or Colleges are located abroad, exemptions shall be given from submitting the two point character certificate, transfer certificate/migration certificate and gap certificate. However, if foreign students have completed last degree certificate from the institution located in India, the above exemption will not apply.

11.6 For staff students, gap certificate may not be insisted if they produce a certificate from the office of the CPO that their antecedents have been verified satisfactorily with the provision that character certificate to staff students will be issued from the office of the CPO.

11.7 Students, who have qualified privately, would be required to submit Transfer Certificate and Two-point Character Certificate from the institution from where they have passed earlier Examination as regular student.

11.8 The name of the students, both in English and Hindi, in the documents to be issued by this University, shall be spelled as given in the Mark Sheet and Certificate/Degrees of the qualifying Examination only. In case, the name of the student either in Hindi or English is not available in the mark sheet certificate of earlier Examination, the same shall be spelled as given in the application form submitted by the students at the time of admission.

11.9 The surname of graduating girl students may be changed only after submission of marriage certificate or satisfactory evidence to this effect by the student concerned. In place of Ms./Km. in brief form of Mrs./Smt. be added after the name changed as above.

11.10 Issuing of Duplicate copy of Certificates: The rates of various certificates issued to the students by the Registrar shall be as under:

Particulars of Documents	**Fee (in Rupees)**
(1) **Degree Certificate** (Duplicate)	200/-subject to fulfillment of prescribed norms
(2) **Degree** (in absentia)	150/-
(3) **Transcript** (Duplicate): 1st copy 2nd copy 3rd and onward copies	 100/- 200/- 300/-
(4) **Migration Certificate** (Duplicate) 1st copy 2nd and onward copies	 150/-subject to fulfillment of prescribed norms 300/-subject to fulfillment of prescribed norms
(5) **PDC** (Duplicate) 1st copy 2nd and onward copies	 100/- 200/-
(6) **Duplicate Character Certificate, Thesis Submission Certificate, Bonafide Certificate and Course Completion Certificate, etc.** 1st copy 2nd and onward copies	 50/- 100/-

11.11 The University may issue a duplicate copy of the Degree certificate to a student who might have lost it in the following manner:

11.11.1 The candidate who has lost the degree shall swear an affidavit in the court of law to the effect that he/she has lost the degree, and submit the same to the University.

11.11.2 He/she shall also get it published in the newspaper immediately that he/she has lost the degree and enclose with his/her application a copy of the press notice issued in this regard, while intimating circumstances under which the original degree has been lost.

11.11.3 The candidate applying for issue of a duplicate copy of a degree shall also give an undertaking to the effect that in case his/her original degree is recovered subsequently, he/she will surrender the duplicate copy of the degree to the University.

CHAPTER 12

REGULATIONS ON THE AWARD OF THE CHANCELLOR AND VICE CHANCELLOR'S MEDALS

12.1 THE RULES AND REGULATIONS FOR THE AWARD OF "CHANCELLOR AND VICE CHANCELLOR'S GOLD MEDALS"

12.1.1 At the end of each Academic Year, a Gold Medal to be named as "Chancellor's Gold Medal" shall be awarded to the all Round Best Graduate Student of the University on the basis of the composite index for academic as well as co-curricular and extracurricular activities unless the Vice Chancellor on the advice of the Academic Council, have declared that in any particular year no "Chancellor's Gold Medal" shall be awarded.

12.1.2 At the end of each Academic Year, the Dean/Director of Student Welfare will propose the name of candidates who fulfill the following requirements, shall be eligible for being considered for the award of the medal.

12.1.2.1 That he/she should have obtained a Cumulative Credit Point Average of 7.50 or above out of 10.00 at the end of the degree programme.

12.1.2.2 That he/she should have successfully completed the prescribed course of study for the degree programme within the minimum prescribed period.

12.1.2.3

(i) That he/she should not have been on Academic Probation/Conduct Probation at any time during his/her stay at this University.

(ii) He/she should not have been convicted by a court of law for any criminal offence involving moral turpitude.

12.1.2.4 That he/she should have actively participated in at least one extra-curricular/co-curricular activity and should have secured at least fifty percent marks, out of a total of 25 in co-curricular/extra-curricular activities.

12.1.3 The graduating students who are eligible for the award of the medal on the basis of the criteria laid down in Regulation 12.1.2 above shall be evaluated by awarding marks as follows:

12.1.3.1	For academic performance	75 marks
12.1.3.2	For performance in co-curricular and extra-curricular Activity excluding work programme and NSS	25 marks

12.1.4 The marks on academic performance shall be awarded according to the following formula:

OCPA	% age of Marks
7.5	75.00
7.6	76.00
7.7	77.00
7.8	78.00
7.9	79.00
8.0	80.00
8.1	81.00
8.2	82.00
8.3	83.00
8.4	84.00
8.5	85.00
8.6	86.00
8.7	87.00
8.8	88.00
8.9	89.00
9.0	90.00
9.1	91.00
9.2	92.00
9.3	93.00
9.4	94.00
9.5	95.00
9.6	96.00
9.7	97.00
9.8	98.00
9.9	99.00
10.0	100.00

12.1.5 The marks for performance in co-curricular and extra-curricular activities, as in Regulation 12.1.3.2 above, shall be awarded on the following basis:

Total Marks: 25

(a) Games/Sports/NCC	3 marks for each year being member of any University team	07 maximum marks
(b) Cultural and Literary activities	3 marks for each year being member of any University team	07 maximum marks
(c) Any intervarsity/State /National participation resulting in Winning any prize (first 3 positions)		07 marks
(d) Captain/Vice-Captain of University Team		02 marks
(e) Any others (Community Development etc.)		02 marks

12.1.6 After grading the eligible candidate for the award of the Medal on the basis of Regulations 12.1.4 and 12.1.5 above, a committee consisting of the following Officers shall scrutinize the proposals and finalize the recommendations:

12.1.6.1 Registrar

12.1.6.2 Deans of the Colleges

12.1.6.3 Dean of Student Welfare

12.1.7 The recommendations of the committee appointed under Regulation 12.1.6 shall be submitted to the Vice Chancellor and the Academic Council for approval.

12.1.8 In case of tie, the Medal shall be awarded to each of the candidate securing equal marks.

12.1.9 The award of 'Chancellor's Gold Medal' shall not deprive a candidate of another Medal/Prize which he/she might be entitled to by virtue of his/her having good first position as a graduating student of the faculty during that year.

12.1.10 The Medal shall be awarded at the Annual Convocation of the University.

12.1.11 The material contents of the Medal shall be as per Rules prescribed by the State/Central Government from time to time.

12.1.12 The inscription on one side of the Medal shall be:

CHANCELLOR'S GOLD MEDAL AWARDED TO THE ALL ROUND BEST GRADUATING STUDENT OF THE YEAR

And on the reverse side shall be:

MANYAWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BANDA

(With the University Insignia)

12.1.13 Any matter not provided for in these Regulations shall be determined by the Vice Chancellor, on the recommendation of the Academic Council. The decision of the Vice Chancellor on all such matters shall be final.

12.2 REGULATIONS FOR THE AWARD OF VICE CHANCELLOR'S GOLD, SILVER AND BRONZE MEDALS TO UNDERGRADUATE STUDENTS

12.2.1 At the end of an Academic Year a Gold/Silver/Bronze shall be awarded in each graduate degree programme to those graduating students who secure First, Second and Third positions respectively on the basis of their Overall Credit Point Average (OCPA) including Failure Points and completed the degree within minimum prescribed period; provided further that in case of tie, the medal shall be awarded to each of the candidate securing equal marks.

12.2.2 To be eligible for the award of Vice Chancellor's Gold/Silver/Bronze medal, a student should have obtained an OCPA of 8.00 or above out of 10.00 at the end of his/her degree programme.

12.2.3 He/she should not have been placed on Conduct Probation at any time during his/her her stay at the University.

12.2.4 In order to be eligible for this award, a graduating student shall have completed the graduating requirements within the minimum period prescribed for the degree concerned.

12.2.5 The names of medalists shall be displayed on an Honors Board fixed in the building of the college concerned.

12.2.6 The award of these medals shall not deprive a student for the award of other medal(s) and prize(s) to which he/she might be entitled to by virtue of his/her being eligible for the same.

12.2.7 The Vice Chancellor whose decision shall be final shall determine any matter not provided for in these Regulations.

NOTE:- Course(s) of New Education/Liberal Education shall not be taken into consideration while computing the OCPA for award of these medals.

APPENDIX

ABBREVIATIONS/ACRONYMS USED IN THE ACADEMIC REGULATIONS

Abbreviation	Full form
AC	Academic Council
ADC	Aide-De-Camp
AICTE	All India Council of Technical Education
AR	Academic Regulation
BOM	Board of Management
B.Sc.	Bachelor of Science
CARI	Central Aviation Research Institute
COA	College of Agriculture
CPA	Credit Point Average
CSIR	Council of Scientific and Industrial Research
DA	Dearness Allowance
Dean	Dean of concerned College
DRDO	Defense Research and Development Organization
DATT	District Agricultural Advisory & Transfer of Technology
DSW	Dean Students Welfare
DVD	Digital Versatile Disk
FIP	Faculty Improvement Programme
HOD	Head of Department
ICAR	Indian Council of Agricultural Research
ICRISAT	International Crop Research Institute for semi Arid Tropics
ID Number	Identity Number or Admission Number
IRRI	International Rice Research Institute
KVK	Krishi Vigyan Kendra
KGK	Krishi Gyan Kendra
M.Sc.	Master of Science
NCC	National Cadet Cores
NSS	National Service Scheme
NSO	National Sports Organization
NDRI	National Diary Research Institute
OBC	Other Background Classes
OCPA	Overall Credit Point Average
PDC	Provisional Degree Certificate
PG	Postgraduate
PGS	Post Graduate Studies
Ph. D.	Doctor of Philosophy
QIP	Quality Improvement Programme
RAWE	Rural Agricultural Work Experience
RHWE	Rural Horticultural Work Experience
TA	Travelling Allowance
UP-CATET	Uttar Pradesh Combined Agriculture and Technology Entrance Test
UG	Undergraduate

Department-wise Syllabus and Course Curricula

for

B.Sc. (Hons) Agriculture and

B.Sc. (Hons) Horticulture

Degree programmes

Approved by Academic Council vide Agenda No. 02/05 in its 2nd meeting held on 22nd February 2014

(Developed on the basis of Fourth Deans' Committee of ICAR)

1. COLLEGE OF AGRICULTURE

1.1 AGRONOMY

AGRON 101 Introductory Agriculture (Ancient, Heritage, Agricultural Scenario and Gender Equity in Agriculture) 1(1+0)

Agriculture - 1st Semester

Art, Science and business of crop production; Basic elements of crop production; Factors affecting crop production; History of Agricultural Development; Ancient Indian Agriculture in Civilization Era, Chronological Agricultural Technology development in India. Indian Agriculture, balance sheet, liabilities; Assets and Contrasting trends (DATA); Agril. growth, contrasting food chains; Diversity in physiography, Soil groups, marine, livestock and water; Liabilities: Soil factors, weather factors, Economic ecology, dry and irrigated agriculture; Farming Systems approach, value addition, requirements in new technology; Women in Agriculture: multifaceted roles and tasks, work stress factors, Nutritional and rural life standards, role in house hold design making, drudgery reduction for farm women, women friendly agricultural technology; Empowerment of women; Group dynamics for farm women, rural women; The nucleus of Agricultural Extension and Training.

AGRON 102 Water Management Including Micro Irrigation 3(2+1)

Agriculture - 2nd Semester

Irrigation: definition and objectives, water resources and irrigation development in India and Uttar Pradesh; Soil plant water relationships; Methods of soil moisture estimation, evapotranspiration and crop water requirement; effective rainfall, scheduling of irrigation; Methods of irrigation: surface, sprinkler and drip irrigation; Irrigation efficiency and water use efficiency, conjunctive use of water, irrigation water quality and its management. Water management of different crops: rice, wheat, maize, groundnut, sugarcane, mango, banana and orange.

Practical: Determination of bulk density by field method; Determination of soil moisture content by gravimetric method, tensiometer, electrical resistance block and neutron moisture meter; Determination of field capacity by field method; Determination of permanent wilting point; Measurement of irrigation water through flumes and weirs; Calculation of irrigation water requirement (Problems); Determination of infiltration rate; Demonstration of furrow method of irrigation; Demonstration of check basin and basin method of irrigation; Visit to farmers field and cost estimation of drip irrigation system; Demonstration of filter cleaning, fertigation, injection and flushing of laterals; Erection and operation of sprinkler irrigation system; Measurement of emitter discharge rate, wetted diameter and calculation of emitter discharge variability.

AGRON 201 Field Crops-I (*Kharif Season*) 3(2+1)

Agriculture - 3rd Semester

Origin, geographic distribution, economic importance, soil and climatic requirement**,** varieties, cultural practices and yield of *kharif* crops, Cereals – rice, maize, sorghum, pearl millet and minor millets; Pulses : pigeon pea, mungbean and urdbean; Oilseeds: groundnut, sesame and soybean; Fiber crops: cotton, jute and sunhemp and Forage crops: sorghum, maize, cowpea, cluster bean and napier grass.

Practical: Rice nursery preparation and transplanting/seed bed preparation and sowing of *Kharif* crops; Calculations of seed rate; Sowing of soybean, pigeon pea, mungbean, maize, groundnut and cotton; Effect of seed size on germination and seedling vigour of soybean/groundnut; Effect of sowing depth on germination of soybean; Identification of weeds in rice, maize and soybean fields and study of weed control experiments in these crops; Top dressing of nitrogen in maize and rice and study of fertilizer experiments on rice, maize, sorghum and millets; Study of yield contributing characters, yield calculations, harvesting and yield estimation of above crops; Study of crop varieties and important agronomic experiments; Study of forage experiments.

AGRON 202 Organic Farming 3(2+1)

Agriculture - 3rd Semester; Horticulture - 5th Semester

Introduction, concept, relevance in present context; Organic production requirements; Biological intensive nutrient management-organic manures, vermin-composting, green manuring, recycling of organic residues, bio-fertilizers; Soil improvement and amendments; Integrated diseases and pest management – use of bio-control agents, bio-pesticides pheromones, trap crops, bird perches; Weed management; Quality considerations, certification, labeling and accreditation processors, marketing, exports.

Practical: Raising of vegetable crops organically through nutrient, diseases and pest management; vermin-composting; vegetable and ornamental nursery raising; macro quality analysis, grading, packaging, Postharvest management.

AGRON 203 Field Crops-II (*Rabi Season*) 3(2+1)

Agriculture - 4th Semester

Origin, geographical distribution, economic importance, soil and climatic requirements, varieties, cultural practices and yield of *rabi* crops; Cereals: wheat, barley; Pulses: chickpea, lentil, peas, french bean; Oilseeds: rapeseed and mustard, sunflower, safflower and linseed; Sugar crops: sugarcane and sugar beet, Medicinal and aromatic crops such as mentha, lemon grass, citronella, palma rosa, isabgol and posta; Commercial crops: potato and tobacco, Forage crops: berseem, lucerne and oat.

Practical: Seed bed preparation and sowing of wheat, sugarcane and sunflower; Calculations on seed rate; Top dressing of nitrogen in wheat and study of fertilizer experiments on wheat and mustard; Identification of weeds in wheat and grain legumes, application of herbicide and study of weed control experiments; Morphological characteristics of wheat, sugarcane, chickpea and mustard; Yield contributing characters of wheat; Yield and quality analysis of sugarcane; Crop distribution in the state and the region; Important agronomic experiments of *rabi* crops and visit to research stations related to *rabi* crops.

AGRON 301 Practical Crop Production-I (*Kharif Crops*) 1(0+1)

Agriculture - 5th Semester

Crop planning, raising field crops in multiple cropping systems: Field preparation, seed treatment, nursery raising, sowing, nutrient management, water management, weed management and management of insect-pests and diseases of crops, harvesting, threshing, drying, winnowing, storage and marketing of produce. Preparation of balance sheet including cost of cultivation, net returns per student as well as per team of a group of students.

AGRON 302 Practical Crop Production-II (*Rabi Crops*) 1(0+1)

Agriculture - 6th Semester

Crop planning, raising field crops in multiple cropping systems: Field preparation, seed treatment, nursery raising, sowing, nutrient management, water management, moisture regime in rainfed areas, weed management and management of insect-pests and diseases of crops, harvesting, threshing, drying, winnowing, storage and marketing of produce. Preparation of balance sheet including cost of cultivation, net returns per student as well as per team of a group of students.

AGRON 303 Weed Management in Field and Horticultural Crops 2(1+1)

Agriculture - 6th Semester; Horticulture - 3rd Semester

Weeds: Introduction, harmful and beneficial effects, classification, propagation and dissemination; Weed biology and ecology, crop weed association, crop weed competition and allelopathy, concepts of weed prevention, control and eradication; Methods of weed control: physical, cultural, chemical and biological methods. Integrated weed management; Herbicides: advantages and limitation of herbicide usage in India, herbicide classification, formulations, methods of application; Introduction to Adjuvants and their use in herbicides; Introduction to selectivity of herbicides; Compatibility of herbicides with other agro chemicals; Weed management in major field and horticultural crops, shift of weed flora in cropping systems, aquatic and problematic weeds and their control.

Practical: Identification of weeds; Survey of weeds in crop fields and other habitats; Preparation of herbarium of weeds; Calculations on weed control efficiency and weed index; Herbicide label information; Computation of herbicide doses; Study of herbicide application equipment and calibration; Demonstration of methods of herbicide application; Preparation of list of commonly available herbicides; Study of phytotoxicity symptoms of herbicides in different crops; Biology of nut sedge, bermuda grass, parthenium and celosia; Economics of weed control practices; Tours and visits of problem areas.

AGRON 304 Introduction to Major Field Crops 2(1+1)

Horticulture - 5th Semester

Classification and distribution of field crops, definitions and concept of multiple cropping, mixed cropping, intercropping, relay and alley cropping, cultural practices for raising major cereals (rice, wheat, barley, maize, and minor millet), pulses (chick pea, lentil, peas, french bean, pigeon pea, mung bean, urd bean), oil seeds (rape seed and mustard, sunflower, safflower, linseed, ground nut, sesame and soyabean,) and forage crops (sorghum, pearl millet, cowpea, cluster bean, napier, lucerne, oat and berseem), fibre crops (cotton, jute and sunhemp), sugar crops (sugarcane and suagrbeet), green manuring, crop rotation.

Practical: Identification of crop plants, seeds and weeds. Preparation of cropping scheme. Application of herbicides in field crops. Visit to specific crop research station/institutes/centre.

Elective Courses

AGRON 401 Seed Production Technology **3(1+2)**

Agriculture - 7th Semester

Definition of seed and its quality; DUS test, scope of seed industry in India. Agronomical principles and methods of seed production in important crops; use of growth regulators and chemicals in seed production; floral biology, pollination, breeding behaviour, seed development and maturation; methods of hybrid seed production. Categories of seed; maintenance of nucleus, Breeder foundation and certified seed; seed certification, seed standards; seed act and law enforcement, plant quarantine and quality control. Physiological maturity, seed harvesting, extraction, curing, drying, grading, seed processing, seed coating and pelleting, packaging (containers/packets), storage and cryopreservation of seeds, synthetic seed technology.

Practical: Seed sampling, seed testing (genetic purity, seed viability, seedling vigour, germination, physical purity) and seed health testing. Notification procedures of varieties. Floral biology. Rouging off-types. Methods of hybrid seed production in important crops. Seed extraction techniques. Handling of seed processing and seed testing equipments. Visit to seed processing units. Seed testing laboratory and seed production farms.

AGRON 402 Integrated Farming Systems and Sustainable agriculture: **3(1+2)**

Agriculture - 7th Semester

Farming systems, definition, principles and components. Farming System models for irrigated, dryland situations and modules for marginal, small and large farmers. Farming systems of the world : arable, pastoral, lay farming, shifting cultivation, ranching and agro-forestry systems. Energy and fuel wood plantations. Specialized and diversified farming, family co-operative and collective farming: their occurrence, adaptations and weaknesses. Factors affecting choice of farming systems.Cropping systems, their characteristics and management. Cropping patterns. Agro-ecosystem and agro-ecological zones of India. Efficient food producing systems. Sustainable agriculture-Introduction, definition, goal and current concepts, factors affecting ecological balance and ameliorative measures, land degradation and conservation of natural resources.Sustainable agriculture: Introduction, definition, goal and current concepts, factors affecting ecological balance and ameliorative measures; Land degradation and conservators of

natural resources, LEIA & HEIA; Irrigation problems, waste lands and their development; definition, principles and components, IFS models for wetland, irrigated dry land, rainfed and dry land situations.

Practical: Preparation of cropping scheme for irrigated situations; Preparation of cropping scheme for dry land situations; Study of existing farming systems in nearby villages; Preparation of integrated farming system model for wetlands; Preparation of integrated farming system model for dry lands;; Study of profitable utilization of agricultural wastes; Visit to poultry, fishery and dairy units to study resource allocation, utilization and economics; Preparation of farm lay out plans, different intensity, crop rotations and cropping schemes. Estimating crop yields. Energy budgeting in different crops and cropping systems. Working out ecological optimum crop zones. Project making exercises for establishment of crop production farms under different situations.

AGRON 403 Water Management (Watershed, Micro Irrigation, Problematic Water) 4(1+3)

Agriculture - 7th Semester

Water and its role in plants, water resources of India, major irrigation projects, extent of area and crops irrigated in India and different states. Soil water movement in soil and plants, transpiration, soil-water-plant relationships and water absorption by plants. Plant response to water stress. Soil, plant and meteorological factors determining water needs of crops, scheduling, depth and methods of irrigation, micro irrigation system**.** Fertigation, management of water in controlled environments and polyhouses. Water management of the crops and cropping systems. Quality of irrigation water and management of saline water for irrigation. Water use efficiency. Excess of soil water and plant growth, water management in problem soils. Drainage requirement of crops, methods of field drainage, their layout and spacing.

Practical: Measurement of soil water potential by using tensiometer, pressure plate and membrane apparatus. Soil-moisture characteristics curves. Water flow measurements using different devices. Determination of irrigation requirements. Calculation of irrigation efficiency. Determination of infiltration rate. Determination of saturated/ unsaturated hydraulic conductivity. Determination of Consumptive use, water requirement of a given cropping pattern.

1.2 PLANT BREEDING AND GENETICS

PBG 101 Principles of Genetics and Cytogenetics 3(2+1)

Agriculture & Horticulture - 1st Semester

Mendel's laws of inheritance and exceptions to the laws; Types of gene action, Multiple alleles, Pleiotropism, Penetrance and expressivity; Quantitative traits, Qualitative traits and differences between them; Multiple factor hypothesis; Cytoplasmic inheritance, it's characteristic features and difference between chromosomal and cytoplasmic inheritance; Mutation and it's characteristic features; Methods of inducing mutations and C *l* B technique. Gene expression and differential gene activation; Lac operon and Fine structure of Gene; Ultra structure of cell and cell organelles and their functions; Study of chromosome structure, morphology, number and types, Karyotype and Idiogram; Mitosis and meiosis, their significance and differences between

them; DNA and it's structure, function, types, modes of replication and repair. RNA and its structure, function and types; Transcription, Translation, Genetic code and outline of protein synthesis; Crossing over and factors affecting it; Mechanism of crossing over and Cytological proof of crossing over; Linkage, Types of linkage and estimation of linkage; Numerical chromosomal aberrations (Polyploidy) and evolution of different crop species like Cotton, Wheat, Tobacco, Triticale and Brassicas; Structural chromosomal aberrations.

Practical: Microscopy (Light microscopes and electron microscopes); Preparation and use of fixatives and stains for light microscopy; Preparation of micro slides and identification of various stages of mitosis; Preparation of micro slides and identification of various stages of mitosis; Preparation of micro slides and identification of various stages of meiosis; Preparation of micro slides and identification of various stages of meiosis; Monohybrid ratio and its modifications; Dihybrid ratio and its modifications; Trihybrid ratio; Chi-square analysis and Interaction of factors; Epistatic factors, Supplementary factors and Duplicate factors; Complementary factors, Additive factors and Inhibitory factors; Linkage – Two point test cross; Linkage – Three point test cross; Induction of polyploidy using colchicines; Induction of chromosomal aberrations using chemicals.

PBG 102 Principles of Seed Technology 3(2+1)

Agriculture - 2nd Semester

Introduction to Seed Production, Importance of Seed Production, Seed policy, Seed demand forecasting and planning for certified, foundation and breeder seed production; deterioration of crop varieties; Factors affecting deterioration and their control; Maintenance of genetic purity during seed production, Seed quality; Definition, Characters of good quality seed, different classes of seed; Production of nucleus & breeder's seed; Maintenance and multiplication of pre-release and newly released varieties in self and cross-pollinated crops; Seed Production; Foundation and certified seed production in maize (varieties, hybrids, synthetics and composites); Foundation and certified seed production of rice (varieties & hybrids); Foundation and certified seed production of sorghum and bajra (varieties, hybrids, synthetics and composites); Foundation and certified seed production of cotton and sunflower (varieties and hybrids); Foundation and certified seed (varieties and hybrids) production of castor, tomato, brinjal, chillies, bhendi, onion, bottle gourd and ridge gourd; Seed certification, phases of certification, procedure for seed certification, field inspection and field counts etc.; Seed Act and Seed Act enforcement, Central Seed Committee, Central Seed Certification Board, State Seed Certification Agency, Central and State Seed Testing Laboratories; Duties and powers of seed inspectors, offences and penalties; Seed control order: Seed Control Order 1983, Seed Act 2000 and other issues related to seed quality regulation. Intellectual Property Rights, Patenting, WTO, Plant Breeders Rights, Varietal Identification through Grow–Out Test and Electrophoresis; Seed Drying: Forced air seed drying, principle, properties of air and their effect on seed drying, moisture equilibrium between seed and air, Heated air drying, building requirements, types of air distribution systems for seed drying, selection of crop dryers and systems of heated air drying, recommended temperature and depth of the seeds, management of seed drying, Planning and layout of seed processing plant; Establishment of seed processing plant. Seed processing: air

screen machine and its working principle, different upgrading equipments and their use, establishing a seed testing laboratory. Seed testing procedures for quality assessment, Seed treatment, importance of seed treatment, types of seed treatment, equipment used for seed treatment (Slurry and Mist–O–matic treater); Seed packing and seed storage, stages of seed storage, factors affecting seed longevity during storage and conditions required for good storage; General principles of seed storage, constructional features for good seed warehouse, measures for pest and disease control, temperature control, Seed marketing, marketing structure, marketing organization, sales generation activities, promotional media, pricing policy; Factors affecting seed marketing.

Practical: Seed sampling principles and procedures; Physical Purity analysis of Field and Horticultural crops; Germination analysis of Field and Horticultural crops; Moisture tests of Field and Horticultural crops; Viability test of Field and Horticultural crops; Seed health test of Field and Horticultural crops; Vigour tests of Field and Horticultural crops; Seed dormancy and breaking methods; Grow out tests and electrophoresis for varietal identification; Visit to Seed production plots of Maize, Sunflower, Bajra, Rice, Sorghum, Cotton, Chillies, tomato, brinjal, okra; Visit to Seed processing plants; Visit to Seed testing laboratories; Visit to Grow out testing farms; Visit to Hybrid Seed Production farms; Varietal identification in seed production plots; Planting ratios, isolation distance, rouging, etc.

PBG 201 Principles of Plant Breeding 3(2+1)

Agriculture - 3rd Semester; Horticulture - 2nd Semester

Classification of plants, Botanical description, Floral biology, Emasculation and Pollination techniques in cereals, millets, pulses, oil seeds, fibers, plantation crops etc. Aims and objectives of Plant Breeding; Modes of reproduction, Sexual, Asexual, Apomixis and their classification; Significance in plant breeding; Modes of pollination, genetic consequences, differences between self and cross pollinated crops; Methods of breeding – introduction and acclimatization. Selection, Mass selection Johannson' s pure line theory, genetic basis, pure line selection; Hybridization, Aims and objectives, types of hybridization; Methods of handling of segregating generations, pedigree method, bulk method, back cross method and various modified methods; Incompatibility and male sterility and their utilization in crop improvement; Heterosis, inbreeding depression, various theories of Heterosis, exploitation of hybrid vigour, development of inbred lines, single cross and double cross hybrids; Population improvement programmes, recurrent selection, synthetics and composites; Methods of breeding for vegetatively propagated crops; Clonal selection; Mutation breeding; Ploidy breeding; Wide hybridization, significance in crop improvement.

Practical: Botanical description and floral biology; Study of megasporogenesis and microsporogenesis; Fertilization and life cycle of an angiospermic plant; Plant Breeder's kit; Hybridization techniques and precautions to be taken; Floral morphology, selfing, emasculation and crossing techniques; Study of male sterility and Self-incompatibility in field plots; Rice and Sorghum; Maize and Wheat; Bajra and ragi; Sugarcane and coconut; Groundnut, Castor, Safflower and Sesamum; Redgram, Bengalgram and Greengram; Soybean and blackgram;

Chillies, Brinjal and Tomato; Bhendi, Onion, Bottle gourd and Ridge gourd; Cotton and Mesta; Jute and Sunhemp.

PBG 202 Breeding of Field and Horticultural Crops 3(2+1)

Agriculture - 4th Semester

Breeding objectives and important concepts of breeding self pollinated, cross pollinated and vegetatively propagated crops; Hardy-Weinberg Law; Study in respect of origin, distribution of species, wild relatives and forms, major emphasis on Cereals, (rice, wheat, maize, millets, sorghum, bajra); Pulses (Chickpea, lentil, redgram, greengram, blackgram, soybean); Oilseeds (Groundnut, sesame, sunflower, mustard) etc. Fibers and cash crops (Cotton, Sugarcane) etc. Vegetables (Tomato, cauliflower, cabbage, bhindi, chilli, cucumbers); Flowers crops (Chrysanthemum, rose, gerbera & marigold); Fruit crops (aonla, grapes, citrus, guava, mango, banana, papaya); Major breeding procedures for development of hybrids / varieties of various crops; Plant Genetic Resources their conservation and utilization in crop improvement; Ideotype concept in crop improvement; Breeding for resistance to biotic and abiotic stresses, variability in pathogens and pests; Mechanisms of resistance in plant to pathogens and pest; Genetic basis of adaptability to unfavourable environments; Definition of biometrics, assessment of variability i.e., additive, dominance and epistasis and their differentiation; Genotype x Environment interaction and influence on yield/performance. IPR and its related issues.

Practical: Emasculation and Hybridization techniques; Handling of segregating generations, pedigree methods; Handling of segregating generations, bulk methods; Handling of segregating generations, back cross methods; Field layout of experiments; Field trials, maintenance of records and registers; Estimation of Heterosis and inbreeding depression; Estimation of Heritability, GCA and SCA; Estimation of variability parameters; Parentage of released varieties/hybrids; Problems on Hardy, Weinberg Law; Study of quality characters; Sources of donors for different characters; Visit to seed production and certification plots; Visit to AICRP trials and programmes; Visit to grow out test plots; Visit to various research stations; Visit to other institutions.

PBG 301 Principles of Plant Biotechnology 3(2+1)

Agriculture - 5th Semester

Concepts of Plant Biotechnology: History of Plant Tissue Culture and Plant Genetic Engineering; Scope and importance in Crop Improvement: Totipotency and Morphogenesis, Nutritional requirements of *in-vitro* cultures; Techniques of In-vitro cultures, Micro propagation, Anther culture, Pollen culture, Ovule culture, Embryo culture, Test tube fertilization, Endosperm culture, Factors affecting above i*n-vitro* culture; Applications and Achievements; Somaclonal variation, Types, Reasons: Somatic embryogenesis and synthetic seed production technology; Protoplast isolation, Culture, Manipulation and Fusion; Products of somatic hybrids and cybrids, Applications in crop improvement. Genetic engineering; Restriction enzymes; Vectors for gene transfer – Gene cloning – Direct and indirect method of gene transfer – Transgenic plants and their applications. Blotting techniques – DNA finger printing – DNA based markers – RFLP, AFLP, RAPD, SSR and DNA Probes – Mapping QTL – Future prospects. MAS, and its application in crop improvement.

Practical: Requirements for Plant Tissue Culture Laboratory; Techniques in Plant Tissue Culture; Media components and preparations; Sterilization techniques and Inoculation of various explants; Aseptic manipulation of various explants; Callus induction and Plant Regeneration; Micro propagation of important crops; Anther, Embryo and Endosperm culture; Hardening / Acclimatization of regenerated plants; Somatic embryogenesis and synthetic seed production; Isolation of protoplast; Demonstration of Culturing of protoplast; Demonstration of Isolation of DNA; Demonstration of Gene transfer techniques, direct methods; Demonstration of Gene transfer techniques, indirect methods; Demonstration of Confirmation of Genetic transformation; Demonstration of gel-electrophoresis techniques.

PBG 401 Principles and Procedures of Plant Tissue Culture and Transformation 3(2+1)

Agriculture - 7thSemester

Concepts of plant tissue culture and transformation. Various aspects of plant tissue culture. GMO's/LMO's/transgenies. Gene transfer methods. *Agrobacterium* mediated plant transformation. Particle gun mediated plant transformation. Moleculer characterization of transgenic plants using PCR, Southern and Western analysis. Bioassays with transegenic plants. Genetic engineering of crop plants for useful traits. Foods for the future. Biosafety concerns and regulatory mechanisms. Commercialization of transgenic products.

Practical: Establishment of direct and indirect *in vitro* plant regeneration methods for genetic transformation. Gene construts and their maintenance. Agrobacterium mediated genetic transformation. Particle mediated genetic transformation. Histochemical GUS assays. PCR screening of putative transgenic plants. Raising transgenic plants under controlled conditions.

PBG 402 Principles and Procedures of Moleculer Biotechnology and Genomics

4(2+2)

Agriculture - 7th Semester

Classification, properties and uses of restriction endonucleases. Characteristics and uses of plasmids in moleculer biology. Recombinant DNA technology. Construction and uses of genomic and cDNA libraries. Genome organization of prokaryotes and eukaryotes. Southern, Northern and Western hybridization. RFLPs. Polymerase Chain Reaction (PCR) based markers like RAPDs, SSR, ISSRs, STS, SCAR. Generation of moleculer maps. Application of biotechnology in crop improvement. DNA sequencing. Gene cloning approaches. Funtional genomics, proteomics and bio-informatics.

Practical: Isolation, purification and fractionation of DNA and proteins. Isolation and purification of plasmids. Measurement of proteins. Isolation and purification of plasmids. Measurement of protein and nucleic acid concentration using photospectrometer. DNA amplification using RAPD/SSR primers and its fractionation in agarose gel. Generation of linkage maps and mapping of qualitative genes using important web sites on computer.

PBG 403 Genetics of Crop Plants 3(2+1)

Agriculture - 7th Semester

Historical developments. Genetic recombination. Detection and estimation of linkage from test cross and F_2 data crop plants. Genetic material-organization, structure and replication. Transcription and translation. Genetics of quantitative traits. Genetic equilibrium and forces changing gene frequency. Induction, detection and uses of mutations. Gene regulation and expression. Environmental influence on gene expression. Genetic analysis of important economic traits. Marker assisted selection in crop improvement. Cloning genes of economic importance. Genetic transformation. Functional genomics.

Practical: Study of autosomal monogenic and digenic inheritance. Three point test cross and gene mapping. Detection and estimation of linkage using test cross and F_2 data. Genetic equilibrium. Demonstration of quantitative inheritance. Genetic analysis using molecular markers. Marker assisted selection. QTL mapping. Study of transgenics.

PBG 404 Cytogenetics of Crop Plants 3(2+1)

Agriculture - 7th Semester

History of cytogenetics. Eukaryotic cell. Chromosomal theory of inheritance. Morphology, ultra structure and differential staining of chromosomes. Unusual chromosomes. Cell cycle. Cytological, genetic and morphological effects of chromosomal aberrations and their utilization in crop improvement. Classification, induction, characterization and utilization of haploids, polyploids and aneuploids in crop plants. Locating genes on chromosomes. In situ hybridization. Genome analysis and its relevance for improvement of wheat, cotton, *Brassica* species.

Practical: Microscopy-limits of resolution and magnification. Working principles of compound light microscope, phase contrast microscope, fluorescent microscope. Techniques of cytological preparations. Fixation of material for mitosis and meiosis. Preparation of permanent slides of cell division. Micrometry. Photomicrography. Karyotype analysis. Production and study of polyploids and haploids. Identification of aneuploids.

PBG 405 Theory and Practices of Plant Breeding 4(3+1)

Agriculture - 7th Semester

Role of plant Breeding. Centers of crop plants. genetic resources and their utilisation. Breeding methods in self pollinated, cross pollinated and vegetatively propagated crops and their genetic basis. Utilization of male sterility and self incompatibility. Heterosis and inbreeding depression. Development of hybrid and synthetic cultivars. Mutation breeding. Polyploidy –induction and applications. Breeding for quality traits. Breeding for biotic and abiotic stresses. Exploitation of related/wild germplasm. Procedures for release of new varieties. Plant breeding for sustainable agriculture. Plant Variety protection and Breeder's Rights.

Practical: Emasculation, crossing and selfing in various crops. Handling of germplasm, crossing block, segregation generations and other breeding materials. Study of variability.Use of male sterility and selfincompatibility for hybrid seed production. Quality testing in crop plants. Screening for disease resistance.

PBG 406 Crop Experimentation 3(2+1)

Agriculture - 7th Semester

Experimental designs in plant Breeding- objectives and principles. Principles of experimental designs. Uniformity trials, Progeny rows trials, compact family block design, completely randomized block design, randomized block design, split plot design, incomplete block designs. Simple lattice. Augmented designs. Varietal trials over years and locations, G x E estimation of genetic components. Analysis of co-variance. Determination of yield through its components.

Practical: Statistical parameters and tests of significance. Use of computer packages for analysis. Layout of field experiments. Analysis of CRD, RBD, Latin square, Split plot, Simple lattice, Augmented design and compact family block design. Calculation of phenotypic, genotypic correlation and regression analysis. Estimation of genetic variability, heritability and genetic advance. Analysis of varietal trials and G x E interactions.

1.3 SOIL SCIENCE AND AGRICULTURAL CHEMISTRY

SOILS 101 Introduction to Soil Science 3(2+1)

Agriculture & Horticulture - 1st Semester

Soil:Pedological and edaphological concepts, Origin of the earth, Earth' s crust; Composition: Rocks and minerals Weathering, Soil formation factors and processes; Components of soils; Soil profile, Soil physical properties, Soil texture, Textural classes, Particle size analysis, Soil structure Classification, Soil aggregates, significance, Soil consistency, Soil crusting, Bulk density and particle density of soils & porosity, their significance and manipulation, Soil compaction, Soil Colour, Elementary knowledge of soil classification and soils of India; Soil water, Retention and potentials, Soil moisture constants, Movement of soil water, Infiltration, percolation, permeability, Drainage, Methods of determination of soil moisture Thermal properties of soils, Soil temperature, Soil air, Gaseous exchange, Influence of soil temperature and air on plant growth; Soil colloids, Properties, nature, types and significance; Layer silicate clays, their genesis and sources of charges, Adsorption of ions, Ion exchange, CEC & AEC Factors influencing ion exchange and its Significance. Soil organic matter, Composition, Decomposability, Humus, Fractionation of organic matter, Carbon cycle, C: N ratio. Soil biology, Biomass, Soil organisms and their beneficial and harmful roles.

Practical: Determination of bulk density and particle density, Aggregate analysis, Soil strength, Soil moisture determination, Soil moisture constants – Field capacity Infiltration rate, water holding capacity, soil texture and mechanical analysis – Soil temperature, Analytical chemistry – Basic concepts, techniques and calculations – Collection and processing of soil for analysis – Organic carbon, pH, EC, soluble cations and anions – Study of a soil profile – Identification of rocks and minerals.

SOILS 102 Soil Chemistry, Soil Fertility and Nutrient Management 3(2+1)

Agriculture & Horticulture - 2nd Semester

Soil as a source of plant nutrients, Essential and beneficial elements, criteria of essentiality, forms of nutrients in soil, mechanisms of nutrient transport to plants, factors affecting nutrient availability to plants. Measures to overcome deficiencies and toxicities. Problem soils – acid, salt affected and calcareous soils, characteristics, nutrient availabilities. Reclamation – mechanical, chemical and biological methods. Fertilizer and insecticides and their effect on soil water and air. Irrigations water – Quality of irrigation water and its appraisal. Indian standards for water quality. Use of saline water for agriculture. Soil fertility – Different approaches for soil fertility evaluation. Methods, Soil testing – Chemical methods. critical levels of different nutrients in soil. Plant analysis – DRIS methods, critical levels in plants. Rapid tissue tests. Indicator plants. Biological method of soil fertility evaluation. Soil test based fertilizer recommendations to crops. Factors influencing nutrient use efficiency (NUE) in respect of N, P, K, S, Fe and Zn fertilizers. Source, method and scheduling of nutrients for different soils and crops grown under rainfed and irrigated conditions.

Practical: Principles of analytical Instruments and their calibration and applications, Colorimetry and flame photometry. Estimation of available N, P, K, S, and Zn in soils, pH, EC, soluble cations and anions in soil water extracts. Lime requirement and gypsum requirement of problem soils. Estimation of N, P and K in plants.

SOILS 201 Manures, Fertilizers and Agro-Chemicals 3(2+1)

Agriculture - 4th Semester

Introduction – Raw materials – Manures – Bulky and concentrated – FYM, Composts – Different methods, Mechanical compost plants, Vermi-composting, Green manures, Oil cakes, Sewage and sludge – Biogas plant slurry, Plant and animal refuges. Fertilizers – classifications, Manufacturing processes and properties of major nitrogenous (ammonium sulphate, urea, calcium ammonium nitrate, ammonium nitrate, ammonium sulphate nitrate) phosphatic (single super phosphate, enriched super phosphate, diammonium phosphate, ammonium poly phosphate), potassic and complex fertilizers their fate and reactions in the soil, Secondary and micronutrients fertilizers, Amendments. Fertilizer Control Order, Fertilizer storage; Biofertilizers and their advantage, Organic chemistry as prelude to agro chemicals, Diverse types of agrochemicals, Botanical insecticides (Neem), Pyrethrum, Synthetic pyrethroids. Synthetic organic insecticides, Major classes, Properties and uses of some important insecticides under each class. Herbicides – Major classes – Properties and uses of 2, 4-D, atrazine, glyphosate, butachlor benthiocarb; Fungicides – Major classes – Properties and uses of carbendazim, carboxin, captan, tridemorph and copper oxychloride – Insecticides Act, Plant growth regulators.

Practical: Total nitrogen and phosphorus in manures / composts – Ammonical and nitrate nitrogen – Water soluble P_2O_5, potassium, calcium, sulphur and zinc contents of fertilizers COD in organic wastes – Adulteration in fertilizer. Argentimetric and iodometric titrations – their use in the analysis of lindane metasystox, endosulfan, malathion, copper and sulphur fungicides – Compatibility of fertilizers with pesticides.

SOILS 202 Soil and Plant Analysis **1(0+1)**

Horticulture - 4th Semester

Methods of soil and plant sampling and processing for analysis. Quantification of minerals and their abundance. Soil structure and aggregate analysis. Theories and concepts of soil moisture estimation – gravimetric, tensiometric, gypsum block, neutron probe and pressure methods. Characterization of hydraulic mobility – diffusion and mass flow. Renewal of gases in soil and their abundance. Methods of estimation of oxygen diffusion rate and redox potential. Soil fertility evaluation methods. Use of radio tracer techniques in soil fertility evaluation. Soil micro-organisms and their importance. Saline, alkali, acid, waterlogged and sandy soils, their appraisal and management. Chemical and mineral composition of horticultural crops. Leaf analysis standards, index tissue, interpretation of leaf analysis values. Principles of working of pH meter, electrical conductivity meter, spectrophotometer, flame photometer and atomic absorption spectrophotometer. Quality of irrigation water.

Practical: Collection and preparation of soil and plant samples for analysis. Determination of water holding capacity and hydraulic conductivity of soil. Estimation of moisture content in soils and plants. Determination of pH, electrical conductivity, sodium adsorption ratio and exchangeable sodium percentage of soils. Enumeration of soil microbes. Estimation of available macro and micronutrient elements in soils and their contents in plants. Irrigation water quality analysis.

Elective Course

SOILS 401 Soil Management (Conservation, Problematic Soil, Soil Quality) **4(1+3)**

Agriculture - 7th Semester

Soil Conservation: definition, methods of soil conservation, improved dry farming practices; role of grasses, pastures and afforestation in soil conservation, wind breaks and shelter belts, moisture regime in rainfed areas. Watershed management: definition, objectives, concepts approach, components, steps in implementation of watershed; development of cropping systems for watershed areas. soil conservation in special problematic areas such as hilly, arid and semi-arid, ravines regions, rainfed, waterlogged and wet lands, Drainage considerations and agronomic management. Area and distribution of problem soils: Management of acid and salt – affected soils; salt tolerance crops – monitoring of soil salinity and alkalinity in the field; management principles for sandy, clayey, red lateritic soils, wastes land soils. Dry and ravines land soils; origin and basic concept of dry and ravines land soil, area, distribution and characteristics of dry ravines soils; factors responsible, management principles for dry and ravines soils, drought resistant crops. Agronomic practices in relation to problematic soils; cropping pattern for utilizing poor quality of irrigation water. Soil quality: definition, concept, need of soil quality, soil quality parameters, soil quality indicators factors that affect soil quality, measuring soil quality, management steps to improve soil quality.

Practical: Identification and characterization of problematic soils. Field study of different types of erosion, field studies of different soil conservation measures, soil loss measurements. Identification of different grasses pastures, trees and forest trees for soil conservation. Visit to a soil conservation research centre, demonstration and training centre, visit to a watersheds. Determination of soil microbial population, study of rhizosphere effect.

SOILS 402 Remote Sensing, GIS and Land use Planning 3(1+2)

Agriculture - 7th Semester

Basic components of remote sensing. Characteristics of electromagnetic radiation and its interaction with matter. Spectral features of earth's surface. Sensor Systems. Data acquisition system, data preprocessing, storage and dissemination. Digital image processing and information extraction. Fundamental of aerial photographs. Microwave remote sensing. Visual and digital image interpretation. Introduction to GIS and GPS. Application of Remote Sensing Techniques-crop identification, crop stress detection, yield forecasting, soil moisture, air temperature assessment, drought monitoring, wasteland identification, management & monitoring of crop disease and pest infestation. Analysis of spatial & temporal variability in soils, agroclimatic regionalization.

Practical: Field data collection. Map and imagery scales. S/W and H/W requirements and specifications. Data products, their specifications, media types, data inputs, transformation, display types, image enhancement. Image classification methods. Evaluation of classification errors. Crop discrimination and acreage estimations. Differentiation of different degraded soils. Time domainreflectometry. Use of spectrometer and computation of vegetation indices. Demonstration of case studies. Hands on training. Monitoring and identification of revines land soils.

1.4 ENTOMOLOGY

ENT 201 Insect Morphology and Systematics 3(2+1)

Agriculture & Horticulture - 3rd Semester

History of Entomology in India. Factors for insect's abundance. Classification of phylum Arthropoda upto classes. Relationship of class Insecta with other classes of Arthropoda. Morphology: Structure and functions of insect cuticle and moulting. Body segmentation. Structure of Head, thorax and abdomen. Structure and modifications of insect antennae, mouth parts and legs. Wing venation, modifications and wing coupling apparatus. Structure of male and female genetalia. Sensory organs. Metamorphosis. Dormancy and diapause in insects. Types of larvae and pupae. Structure and functions of digestive, circulatory, excretory, respiratory, nervous, secretory (Exocrine and Endocrine) and reproductive system in insects. Types of reproduction in insects. Systematics**:** Taxonomy –importance, history and development and binomial nomenclature. Definitions of Biotype, Sub-species, Species, Genus, Family and Order. Classification of class Insecta upto Order level. Orthoptera (Acrididae), Dictyoptera (Mantidae), Odonata, Isoptera (Termitidae), Thysanoptera (Thripidae), Hemiptera (Pentatomidae, Coreidae,

Pyrrhocoridae, Lygaeidae, Cicadellidae, Delphacidae, Aphididae, Coccidae, Aleurodidae, Pseudococcidae), Neuroptera (Chrysopidae), Lepidoptera (Noctuidae, Sphingidae, Pyralidae, Gelechiidae, Arctiidae), Coleoptera (Coccinellidae, Chrysomelidae, Cerambycidae, Curculionidae, Bruchidae, Scarabaeidae), Hymenoptera (Tenthridinidae, Apidae, Trichogrammatidae, Ichneumonidae, Braconidae), Diptera (Cecidomyiidae, Trypetidae, Tachinidae, Agromyziidae).

Practical: Methods of collection and preservation of insects including immature stages; External features of Grasshopper/Blister beetle; Types of insect antennae, mouthparts and legs; Wing venation, types of wings and wing coupling apparatus. Types of insect larvae and pupae. Dissection of digestive system in insects (Grasshopper); Study of characters of orders Orthoptera, Dictyoptera, Odonata, Isoptera, Thysanoptera, Hemiptera, Lepidoptera, Neuroptera, Coleoptera, Hymenoptera, Diptera and their families of agricultural importances.

ENT 202 Insect Ecology and Integrated Pest Management including Beneficial Insects 3(2+1)

Agriculture - 4th Semester

Insect Ecology: Introduction, Environment and its components. Effect of abiotic factors– temperature, moisture, humidity, rainfall, light, atmospheric pressure and air currents. Effect of biotic factors – food competition and natural enemies. Homeostasis, biotic potential and environmental resistance and causes for outbreak of pests in agro-ecosystem. Pest surveillance and pest forecasting. Categories of pests. IPM; Introduction, importance, concepts, principles and tools of IPM-Host plant resistance, Cultural, Mechanical, Physical, Legislative, Biological (parasites, predators & microbial agents such as bacteria, fungi and viruses), Chemical control – importance, hazards and limitations. Classification of insecticides, toxicity of insecticides and formulations of insecticides. Study of important insecticides. Botanical insecticides – neem based products, Cyclodiens, Organophosphates, Carbamates, Synthetic pyrethroids, Novel insecticides, Pheromones, Nicotinyl insecticides, Chitin synthesis inhibitors, Phenyl pyrazoles, Avermectins, Macrocyclic lactones, Oxadiazimes, Thiourea derivaties, pyridine azomethines, pyrroles, etc. Nematicides, Rodenticides, Acaricides and fumigants. Recent methods of pest control- repellents, antifeedants, hormones, attractants, gamma radiation and genetic control. Practices, scope and limitations of IPM. Insecticides Act 1968 – Important provisions. Application techniques of spray fluids. Phytotoxicity of insecticides. Symptoms of poisoning, first aid and antidotes. Beneficial insects: parasitoids and predators used in pest control and mass multiplication techniques of Trichgrammatids and Coccinellids. Important groups of microorganisms- bacteria, viruses and fungi used in pest control. Important species of pollinators, weed killers and scavengers and their importance. Non insect-pests such as mites, rodents and birds. Apiculture, sericulture and lac culture.

Practical: Visit to meteorological observatory / automatic weather reporting station; Study of terrestrial and pond ecosystems of insects; Study of distribution patterns of insects, sampling techniques for the estimation of insect population and damage; Pest surveillance through light traps, pheremone traps and field incidence; Practicable IPM practices, Mechanical and physical methods; Practicable IPM practices, Cultural and biological methods; Chemical control, Insecticides and their formulations; Calculation of doses/concentrations of insecticides; Compatibility of pesticides and Phytotoxicity of insecticides; IPM case studies; Identification of

rodents and bird pests and their damage; Other beneficial insects – Pollinators, weed killers and scavengers.

ENT 203 Insect Pests of Fruit, Plantation, Medicinal and Aromatic Crops 3(2+1)

Horticulture - 4th Semester

General – economic classification of insects; ecology and insect-pest management with reference to fruit, plantation, medicinal and aromatic crops; pest surveillance. Distribution, host-range, injury, integrated management of important insect-pests affecting tropical, sub-tropical and temperate fruits, plantation, medicinal and aromatic crops like coconut, cashew, cacao, tea, coffee, rubber, betel-vine, senna, neem, hemp, belladonna, pyrethrum, camphor, costus, crotalaria, datura, dioscorea, mint, opium and *Solanum khasianum*. Storage insects – distribution, host-range, bioecology, injury, integrated management of important insect pests attacking stored fruits, plantation, medicinal and aromatic crops and their processed products. Toxicology – insecticide residue problems in fruit, plantation, medicinal and aromatic crops and their tolerance limits.

Practical: Study of symptoms of damage, collection, identification, preservation, assessment of damage and population of important insect-pests affecting fruits, plantation, medicinal and aromatic crops in field and storage.

ENT 301 Crop Pests and Stored Grains Pests and their Management 3(2+1)

Agriculture - 5th Semester

Important Coleopteran and Lepidopteran insect-pests of stored grain- their biology, damage, preventive and curative methods of management. Distribution, biology, nature and symptoms of damage, and management strategies of insect and non insect pests of rice, sorghum, maize, ragi (*Eleucine coracana*), wheat, sugarcane, cotton, mesta, sunhemp, pulses, groundnut, castor, safflower, sunflower, mustard, brinjal, bhendi, tomato, cruciferous and cucurbitaceous vegetables, potato, sweet potato, colacasia, moringa, chillies, mango, citrus, grapevine, cashew, banana, pomegranate, guava, sapota, ber, apple, coconut, tobacco, coffee, tea, turmeric, betel-vine, onion, coriander, garlic, ginger and ornamental plants.

Practical: Identification of pests, their damage symptoms and management of rice, sorghum, maize, wheat, sugarcane, cotton, pulses, Solanaceous and Malvaceous vegetables, cruciferous and cucurbitaceous vegetables, chilli, mango, citrus and sapota.

ENT 302 Insect Pests of Vegetable, Ornamental and Spice Crops 3(2+1)

Horticulture - 6th Semester

Economic importance of insects in vegetable, ornamental and spice crops- ecology and pest management with reference to these crops. Pest surveillance in important vegetable, ornamental and spice crops. Distribution, host-range, bio-ecology, injury, integrated management of important insect-pests affecting vegetable, ornamental and spice crops. Important storage insect-pests of vegetable, ornamental and spice crops, their host-range, bioecology, injury and integrated management. Insect-pests of processed vegetables and ornamental crops, their host-

range, bio-ecology, injury and integrated management. Insecticidal residue problems in vegetables and ornamental crops, tolerance limits etc.

Practical: Study of symptoms, damage, collection, identification, preservation, assessment of damage/population of important insect-pests affecting vegetable, ornamental and spice crops in field and during storage

ENT 303 Apiculture 1(0+1)

Horticulture - 6th Semester

Practical: Importance and history of apiculture, different species of bees, morphology, anatomy, colony organization and life cycle, bee-keeping equipment, social behaviour, reproduction, queen rearing, bee pasturage, seasonal management, economics of beekeeping. Bee enemies, diseases of bees, role of bees in increasing the productivity of horticultural crops in Indian economy, bee products and their uses. Recent trends in apiculture. Acquaintance with honey bee species, morphology, structural adaptation, biology-castes, bee-keeping equipments, bee flora. Collection and preservation of bee flora, enemies and diseases of bees. Handling of bee colonies and manipulation for honey production.

ENT 401 Beekeeping 3(1+2)

Agriculture - 7th Semester

Indian history of beekeeping. Species and races of honey bees. General colony management during different seasons. Morphology and anatomy of honey bee. Colony organization, life cycle and division of labour in *Apis mellifera.* Seasonal management of honey bee colonies, swarming, drifting and curbing drone population. Management of queen-less and laying worker colonies. Colony multiplication. Bee enemies and diseases. Protection from pesticide hazards. Maximizing honey production. Bee-flora. Role of Bee-hives in pollination of crops. Colony migration. Apicultural diversification. Honey and its quality. Economics of beekeeping.

Practical: Important species of honey bees, castes differentiation and body structure. Handling of colonies. Colony organization and food storage pattern. Langstroth hive, apicultural equipment and machinery. Bee-flora. Seasonal management practices. Colony division. Mass queen bee rearing techniques. Queen introduction, clipping and marking. Bee pollination of crops. Management of bacterial, viral and fungal diseases of honey bees. Identification and management of parasitic mites, wax moths, ants, wasps and predatory birds. Honey extraction. Pollen, porpolis and bee venom collection. Processing of bees wax. Royal jelly production and collection. Honey processing and packaging. Honey testing. Visit to beekeeping industry (Hive manufacturing, equipment manufacturing, honey processing and exporting commercial units).

ENT 402 Bio-control agencies and their bio-pesticide (mass multiplication and uses) 4(2+2)

Agriculture - 7th Semester

History and concept of biological control, different groups of biological control agents and biopesticides-macrobials (parasitoids and predators) microbial (bacteria, viruses, fungi, protozoa and nematodes) and botanical- neem, pyrethrum, nicotine, rotenone and others, their use in pest management along with advantages and limitations. Methods of mass production for each of these groups. National and international agencies dealing with biological control.

Practical: Identification of important groups of parasitoids, predators and microbial control agents. Laboratory multiplication of parasitoids, predators and microbial control agents. Use of pheromones, colour, sticky and light traps for monitoring and surveillance of pests.

ENT 403 Pesticides and Plant Protection Equipment 3(1+2)

Agriculture - 7th Semester

Pesticides classification, properties, entry and mode of action. Formulations and toxicity of pesticides. Factors affecting toxicity of pesticides. Compatibility and synergism. Antidotes problems associated with the use of pesticides. Role of repellents, attractants, pheromones, hormones, chemosterilants and antifeedants in pest control. Pest control equipment – history of development, classification, constructional features, principles of working, operation, maintenance and selection. Planning of pest control operations.

Practical: Familiarization with different formulations of pesticides, their preparation and use, Toxicity to insects and plants. Practice in the use of various types of pest-control equipment. Study of factors affecting efficacy of pesticide spray. Calibrations of plant protection equipments. Common troubles in the use of pest-control equipment and their remedies. Estimation of pesticide residue in food commodities.

1.5 AGRICULTURAL ECONOMICS

ECON 101 Principles of Agricultural Economics 2(2+0)

Agriculture & Horticulture - 2nd Semester

Economics: Meaning, Definition, Subject matter, Divisions of Economics, Importance of Economics; Agricultural Economics: Meaning, Definition; Basic Concepts: Goods, Service, Utility, Value, Price, Wealth, Welfare. Wants: Meaning, Characteristics, Classifications of Wants, Importance. Theory of consumption: Law of Diminishing Marginal utility, Meaning, Definition, Assumption, Limitations, Importance. Consumer's surplus: Meaning, Definition, Importance. Demand: Meaning, Definition, Kinds of Demand, Demand schedule, Demand Curve, Law of Demand, Extension and Contraction Vs Increase and Decrease in Demand. Elasticity of Demand: Types of Elasticity of Demand, Degrees of price elasticity of Demand, Methods of Measuring Elasticity, Factors influencing elasticity of Demand, Importance of Elasticity of Demand. Welfare Economics: Meaning, Pareto's optimality. National Income: Concepts, Measurement. Public Finance: Meaning, Principles. Public Resource: Meaning, Services Tax, Meaning and Classification of Taxes: Cannons of Taxation, Public expenditure: Meaning, Principles. Inflation: Meaning, Definition, Kinds of inflation.

ECON 201 Agricultural Finance and Cooperation 2(1+1)

Agriculture - 3rd Semester

Agricultural finance: nature and scope. Time value of money, Compounding and Discounting. Agricultural credit: meaning, definition, need, classification. Credit analysis: 4R' s 5C' s and 7 P' s of credit, repayment plans. History of financing agriculture in India. Commercial banks, nationalization of commercial banks. Lead bank scheme, regional rural banks, scale of finance. Higher financing agencies, RBI, NABARD, AFC, Asian Development Bank, World Bank, Insurance and Credit Guarantee Corporation of India. Assessment of crop losses, determination of compensation. Crop insurance, advantages and limitations in application, estimation of crop yields. Agricultural cooperation: philosophy and principles. History of Indian cooperative Movement, pre-independence and post independence periods, cooperation in different plan periods, cooperative credit structure: PACS, FSCS. Reorganisation of cooperative credit structure in Andhra Pradesh and single window system. Successful cooperative systems in Gujarat, Maharashtra. Punjab, Uttar Pradesh etc.

Practical: Factors governing use of Capital and identification of credit needs; Time value of money, Compounding and discounting; Tools of financial management, Balance sheet, Income statement and cash flow analysis; Estimations of credit needs and determining unit costs; Preparations and analysis of loan proposals; Types of repayment loans; Study of financial institutions: PACS, DCCB, Apex Banks, RRBs, CBs, NABARD.

ECON 202 Agricultural Marketing, Trade and Prices 2(1+1)

Agriculture - 4th Semester

Agricultural Marketing: Concepts and Definition, Scope and subject matter, Market and Marketing: Meaning, Definitions, Components of a market, Classification. Market structure, Conduct, performance. Marketing structure, Market functionaries or agencies, Producer' s surplus: Meaning, Types of producers surplus, marketable surplus. Marketed surplus, importance, Factors affecting Marketable surplus. Marketing channels: Meaning, Definition, Channels for different products. Market integration, Meaning, Definition, Types of Market Integration. Marketing efficiency: Meaning, Definition, Marketing costs, Margins and price spread, Factors affecting the cost of marketing, Reasons for higher marketing costs of farm commodities, Ways of reducing marketing costs. Theories of International Trade: Domestic Trade, Free trade, International Trade, GATT, WTO, Implications of AOA. Market access, Domestic support, Export subsidies, EXIM-Policy & Ministerial conferences. Cooperative Marketing. State Trading. Ware Housing Corporation; Central and State, Objectives, Functions, Advantages. Food Corporation of India: Objectives and Functions. Quality Control, Agricultural Products, AGMARK. Price Characteristics of agricultural product process, Meaning, Need for Agricultural Price Policy. Risk in Marketing: Meaning and importance, Types of Risk in Marketing. Speculations and Hedging, Futures trading, Contract farming.

Practical: Identification of marketing channels; Study of Rythu Bazars, Regulated markets; Study of unregulated markets; Study of livestock markets; Price spread analysis; Visit to market institutions, NAFED; Study of SWC, CWC and STC; Analysis of information of daily prices; Marketed and marketable surplus of different commodities.

ECON 301 Fundamentals of Agribusiness Management (including Project Development, Appraisal and Monitoring) 2(1+1)

Agriculture - 5th Semester

Agribusiness: Meaning, Definition, Structure of Agribusiness, (Input, Farm, Product Sectors). Importance of Agribusiness in the Indian Economy, Agricultural Policy. Agribusiness Management, Distinctive features, Importance of Good Management, Definitions of Management. Management Functions, Planning, Meaning, Definition, Types of Plans (Purpose or Mission, Goals or Objectives, Strategies, Polices, Procedures, rules, programmes, Budget) characteristics of sound plan, Steps in planning, Organisation, Staffing, Directing, Motivation, Ordering, Leading, Supervision, Communication, control. Capital Management. Financial Management of Agribusiness: Importance of Financial Statements, Balance sheet, Profit and Loss Statement, Analysis of Financial statements. Agro-based Industries: Importance and Need, Classification of Industries, Types of Agro-based Industries, Institutional arrangement, Procedure to set up agro-based industries, Constraints in establishing agro-based industries. Marketing Management: Meaning, Definitions, Marketing Mix, 4Ps of Marketing. Mix, Market segmentation, Methods of Market, Product life cycle. Pricing policy, Meaning, pricing method. Prices at various stages of Marketing. Project, definitions, project cycle, Identification, Formulation, Appraisal, Implementation, Monitoring and evaluation, Appraisal and Evaluation techniques, NPW, BCR, IRR, N/K ratio, sensitivity analysis, characteristics of agricultural projects: preparation of project reports for various activities in agriculture and allied sectors: Dairying, poultry, fisheries, agro-industries etc.

Practical: Study of input markets: seed, fertilizers, pesticides. Study of output markets, grains, fruits, vegetables, flowers. Study of product markets, retail trade commodity trading, value added products. Study of financing institutions cooperatives commercial banks, RRBs, Agribusiness Finance Limited, NABARD; Preparations of projects, Feasibility reports; Project appraisal techniques; Case study of agro-based industries.

ECON 302 Production Economics and Farm Management 2(1+1)

Agriculture - 6th Semester

Production Economics: Meaning, Definition, Nature and Scope of Agricultural Production Economics. Basic concepts and terms. Concepts of Production. Production Functions: Meaning, Definition, Types. Laws of returns: Increasing, Constant and decreasing. Factor Product Relationship. Determination of optimum input and output. Factor relationship. Product relationship. Types of enterprise relationships. Returns to scale: Meaning, Definition, Importance. Farm Management. Economic principles applied to the Organisations of farm business. Types and systems of farming. Farm planning and budgeting. Risk and uncertainty. Farm budgeting. Linear programming: Assumptions, Advantages and Limitations of Linear programming.

Practical: Computation of cost concepts; Methods of computation of depreciation; Analysis of Net worth statement; Farm inventory analysis; Preparation of farm plans and budgets; Types of farm records and accounts; Preparation of profit and loss account; Break, Even analysis; Economics analysis of different crop and livestock enterprises; Application of Farm Management Principles.

1.6 AGRICULTURAL ENGINEERING

SWE 101 Fundamentals of Soil and Water Conservation Engineering 3(2+1)

Agriculture - 1st Semester

Surveying: survey equipment, chain survey, cross staff survey, plotting procedure, calculations of area of regular and irregular fields. Levelling – levelling equipment, terminology, methods of calculation of reduced levels, types of levelling, contouring. Irrigation, classification of projects, flow irrigation and lift irrigation. Water source, Water lifting devices – pumps (shallow and deep well), capacity, power calculations. Irrigation water measurement – weirs, flumes and orifices and methods of water measurement and instruments. Water conveyance systems, open channel and underground pipeline. Irrigation methods – drip and sprinkle irrigation systems. Soil and water conservation – soil erosion, types and engineering control measures.

Practical: Acquaintance with chain survey equipment; Ranging and measurement of offsets; Chain triangulation; Cross staff survey; Plotting of chain triangulation; Plotting of cross staff survey; Levelling equipment – dumpy level, levelling staff, temporary adjustments and staff reading; Differential leveling; Profile leveling; Contour survey – grid method; Plotting of contours; Study of centrifugal pumping system and irrigation water measuring devices; Study of different components of sprinkler irrigation systems; Study of different components of drip and sprinkler irrigation systems; Uniformity of water application in drip and sprinkler systems; Study of soil and water conservation measures.

SWE 201 Protected Cultivation and Postharvest Technology 2(1+1)

Agriculture & Horticulture - 4th Semester

Green house technology, Introduction, Types of Green Houses; Plant response to Green house environment, Planning and design of greenhouses, Design criteria of greenhouse for cooling and heating purposes. Green house equipment, materials of construction for traditional and low cost green houses. Irrigation systems used in greenhouses, Typical applications, passive solar green house, hot air green house heating systems, green house drying. Cost estimation and economic analysis. Choice of crops for cultivation under greenhouses, problems / constraints of greenhouse cultivation and future strategies. Growing media, soil culture, type of soil required, drainage, flooding and leaching, soil pasteurization in peat moss and mixtures, rock wool and other inert media, nutrient film technique (NFT) / hydroponics. Threshing, threshers for different crops, parts, terminology, care and maintenance. Winnowing, manual and power operated winnowers, care and maintenance. Groundnut decorticators, hand operated and power operated decorticators, principles of working, care and maintenance. Maize shellers & castor shellers. Drying, grain drying, types of drying, types of dryers. Storage, grain storage, types of storage structures. Fruits

and vegetables cleaning, machinery for cleaning of fruits and vegetables, care and maintenance. Grading, methods of grading, equipment for grading of fruits and vegetables, care and maintenance. Size reduction. equipment for size reduction care and maintenance. Evaporation, Principle, types of evaporators, quality standards – FAQ, ASTA, FPO, FDA.

Practical: Study of different types of green houses based on shape, construction and cladding materials; Calculation of air rate exchange in an active summer winter cooling system; Calculation of rate of air exchange in an active winter cooling system; Estimation of drying rate of agricultural products inside green house; Testing of soil and water to study its suitability for growing crops in greenhouses; The study of fertigation requirements for greenhouses crops and estimation of E.C. in the fertigation solution; The study of various growing media used in raising of greenhouse crops and their preparation and pasteurization / sterilization; Visit to commercial green houses; Study of threshers, their components, operation and adjustments; Winnowers, their components, operation and adjustements; Study of different components of groundnut decorticator; Study of maize shellers; Study of castor shellers; Study of improved grain storage structure; Study of dryers; Study of cleaners & graders.

FPM 201 Farm Power and Machinery 2(1+1)

Agriculture & Horticulture - 3rd Semester

Farm power in India: sources, I.C engines, working principles, two stroke and four stroke engines, I.C. engine terminology, different systems of I.C. engine. Tractors, Types, Selection of tractor and cost of tractor power. Tillage implements: Primary and Secondary tillage implements, Implements for intercultural operations, seed drills, paddy transplanters, plant protection equipment and harvesting equipment; Equipment for land development and soil conservation.

Practical: Study of different components of I.C. Engine; Study of working of four stroke engine; Study of working of two stroke engine; Study of M.B. plough, measurement of plough size, different parts, horizontal and vertical suction, determination of line of pull etc.; Study of disc plough; Study of seed–cum-fertilizer drills-furrow opener, metering mechanism, and calibration; Study, maintenance and operation of tractor; Learning of tractor driving; Study, maintenance and operation of power tiller; Study of different parts, registration, alignment and operation of mower. Study of different inter cultivation equipment in terms of efficiency, field capacity; Repairs and adjustments and operation of sprayers; Repairs and adjustments and operation of dusters; Study of paddy transplanters.

FPM 301 Renewable Energy 2(1+1)

Agriculture - 6th Semester

Energy sources, Introduction, Classification, Energy from Biomass, Types of biogas plants, constructional details, Biogas production and its utilization, Agricultural wastes, Principles of combustion, pyrolysis and gasification, Types of gasifiers, Producer gas and its utilization. Briquettes, Types of Briquetting machines, uses of Briquettes, Shredders. Solar energy, Solar flat plate and focussing plate collectors, Solar air heaters, Solar space heating and cooling, Solar energy applications / Solar energy gadgets, Solar cookers, Solar water heating systems, solar

grain dryers, Solar Refrigeration system, Solar ponds, Solar photo voltaic systems, solar lantern, Solar street lights, solar fencing, Solar pumping systems. Wind energy, Types of wind mills, Constructional details & application of wind mills. Liquid Bio fuels, Bio diesel and Ethanol from agricultural produce, its production & uses.

Practical: Constructional details of KVIC & Janatha type biogas plants; Constructional details of Deen Bandu type biogas plants; Field visit to biogas plants; Constructional details of different types of gasifiers; Testing of gasifiers; Briquette preparation from biomass; To study and find the efficiency of solar cooker; To study and find the performance of a solar still; To study and find the performance of a solar dryers; Study and working of solar photovoltaic pumping system; Study and performance evaluation of domestic solar water heater; Study and performance evaluation of solar lantern; Study and performance evaluation of solar street light; To study the performance of different types of wind mills; Field visit to wind mills; To study the processing of Bio-diesel production from Jatropha.

1.7 PLANT PATHOLOGY

PL PATH 101 Plant Pathogens and Principles of Plant Pathology 4(3+1)

Agriculture - 1st Semester; Horticulture - 3rd Semester

Introduction, Important plant pathogenic organisms, different groups, fungi, bacteria, fastidious vesicular bacteria, phytoplasmas, spiroplasmas, viruses, viriods, algae, protozoa and phanerogamic parasites with examples of diseases caused by them. Prokaryotes: classification of prokaryotes according to Bergey' s Manual of Systematic Bacteriology. General Characters of fungi, Definition of fungus, somatic structures, types of fungal thalli, fungal tissues, modifications of thallus, reproduction in fungi (asexual and sexual). Nomenclature, Binomial system of nomenclature, rules of nomenclature, classification of fungi. Key to divisions and sub-divisions. Introduction: Definition and objectives of Plant Pathology. History of Plant Pathology. Terms and concepts in Plant Pathology. Survival and Dispersal of Plant Pathogens. Phenomenon of infection – pre-penetration, penetration and post penetration. Pathogenesis – Role of enzymes, toxins, growth regulators and polysaccharides. Defense mechanism in plants – Structural and Bio-chemical (pre and postinfection). Plant disease epidemiology. Plant Disease Forcasting – Remote sensing – General principles of plant diseases management – Importance, general Principles – Avoidance, exclusion, protection – Plant Quarantine and Inspection – Quarantine Rules and Regulations. Cultural methods – Roguing, eradication of alternate and collateral hosts, crop rotation, manure and fertilizer management, mixed cropping, sanitation, hot weather ploughing, soil amendments, time of sowing, seed rate and plant density, irrigation and drainage. Role and mechanisms of biological control and PGPR. Physical Methods – Heat treatment; Chemical methods – Methods of application of fungicides. Host plant resistance – Application of biotechnology in plant disease management –Development of disease resistant treansgenic plants through gene cloning. Integrated plant disease management (IDM) – Concept, advantages and importance.

Practical: Acquaintance to plant pathology laboratory and equipments; Preparation of culture media for fungi and bacteria*;* Isolation techniques, preservation of disease samples; Study of

Pythium, Phytophthora and *Albugo;* Study of *Sclerospora, Peronosclerospora, Pseudoperonospora, Peronospora, Plasmopara* and *Bremia;* Study of genera *Mucor and Rhizopus.* Study of *Oidium, Oidiopsis, Ovulariopsis, Erysiphe, Phyllactinia, Uncinula and Podosphaera;* Study of *Puccinia* (different stages), *Uromyces, Hemiliea;* Study of *Sphacelotheca, Ustilago and Tolyposporium;* Study of *Agaricus, Pleurotus and Ganoderma;* Study of *Septoria, Colletotrichum, Pestalotiopsis and Pyricularia;* Study of *Aspergillus, Penicillium, Trichoderma, and Fusarium;* Study of *Helminthosporium, Drechslera, Alternaria, Stemphyllium, Cercospora, Phaeoisariopsis, Rhizoctonia and Sclerotium;* Demonstration of Koch' s postulates; Study of different groups of fungicides and antibiotics; Preparation of fungicides – Bordeaux mixture, Bordeaux paste, Chestnut compound; Methods of application of fungicides – seed, soil and foliar; Bio-assay of fungicides – poisoned food technique, inhibition zone technique and slide germination technique; Bio-control of plant pathogens – dual culture technique, seed treatment. Visit to quarantine station and remote sensing laboratory.

PL PATH 102 Introductory Nematology 2(1+1)

Agriculture - 2nd Semester

Introduction: History of phytonematology. Economic importance. General characteristics of plant pathogenic nematodes. Nematode general morphology and biology. Classification of nematodes upto family level with emphasis on groups containing economically important genera. Classification of nematodes by habitat. Identification of economically important plant nematodes upto generic level with the help of keys and description. Symptoms caused by nematodes with examples. Interaction between plant parasitic nematodes and disease causing fungi, bacteria and viruses. Different methods of nematode management. Cultural methods (crop rotation, fallowing, soil amendments, other land management techniques), physical methods (soil solarisation, hot water treatment) Biological methods, Chemical methods (fumigants, non fumigants). Resistant varieties. IDM.

Practical: Methods of survey – sampling methods, collection of soil and plant samples; Extraction of nematodes from soil and plant tissues following combined Cobb' s decanting – sieving and Baermann funnel technique, counting and estimation of plant parasitic nematodes; Preparation of temporary and permanent mounts; Method of preparation of perineal patterns for identification of species of *Meloidogyne;* Study and identification of most important plant parasitic nematodes with special reference to their characteristics and symptomtolgy – *Meloidogyne, Pratylenchus; Heterodera, Ditylenchus, Globodera, Tylenchulus, Xiphinema, Radopholus, Rotylenchulus, and Helicotylenchus.* Experimental techniques used in pathogenicity studies with root knot nematode.

PL PATH 201 Diseases of Field Crops and their Management 3(2+1)

Agriculture - 4th Semester

Economic importance, symptoms, cause, epidemiology and disease cycle and integrated management of diseases of rice, sorghum, bajra, maize, wheat, sugarcane, turmeric,

tobacco,mustard, linseed, groundnut, sesamum, sunflower, cotton, redgram, bengalgram, lentil, blackgram, greengram, soybean.

Practical: Study of symptoms, etiology, host-parasite relationship and specific control measures of the following crop diseases. Presentation of disease samples survey and collection of Diseases of rice, sorghum; Diseases of wheat, bajra & maize; Diseases of sugarcane, turmeric & tobacco; Diseases of groundnut, castor & sunflower; Diseases of sesamum, linseed & cotton; Diseases of redgram, greengram, blackgram, lentil, bengalgram; Field visits at appropriate time during the semester.

NOTE:- Students should submit 50 pressed, well mounted diseased specimens in three installments during the semes

PL PATH 202 Nematode Pests of Horticultural Crops and their Management

2(1+1)

Horticulture - 3rd Semester

History of development of nematology - definition, economic importance. General characters of plant parasitic nematodes, their morphology, taxonomy, classification, biology, symptomatology and control of important plant parasitic nematodes of fruits – (tropical, subtropical and temperate) vegetables, tuber, ornamental, spice and plantation crops. Role of nematodes in plant disease complex.

Practical: Methods of sampling and extraction of nematodes from soil and plant parts, killing, fixing and preparation of temporary and permanent nematode mounts. Nematicides and their use. Collection and preservation of 20 plant species/parts damaged by plant parasitic nematodes.

PL PATH 203 Diseases of Fruit, Plantation, Medicinal and Aromatic Crops

3(2+1)

Agriculture 5th Semester Horticulture - 3rd Semester

Etiology, symptoms, mode of spread, epidemiology and integrated management of the diseases of fruits, plantation, medicinal and aromatic crops viz mango, banana, grape, citrus, guava, sapota, papaya, jack fruit, pineapple, pomegranate, ber, apple, pear, peach, plum, almond, walnut, strawberry, areca nut, coconut, oil palm, coffee, tea, cocoa, cashew, rubber, betel vine, senna, neem, hemp, belladonna, pyrethrum, camphor, costus, crotalaria, datura, dioscorea, mint, opium, *Solanum khasianum* and Tephrosia. Study of important diseases of vegetable crops in brief. Important post-harvest diseases of fruit, plantation and medicinal and aromatic crops and their management.

Practical: Observations of disease symptoms, identification of casual organisms and host parasite relationship of important diseases. Examination of scrapings and cultures of important pathogens of fruits, plantation, medicinal and aromatic crops.

PL PATH 204 Mushroom Culture **1(0+1)**

Horticulture - 4th Semester

Introduction to mushrooms fungi – nutritional value, edible and poisonous types, edible mushrooms, *Pleurotus*, *Volvariella* and *Agaricus*, medicinal value of mushrooms, genetic improvement of mushroom, preparation of culture, mother spawn production, multiplication of spawn, cultivation techniques, harvesting, packing and storage; problems in cultivation – diseases, pest and nematodes – weed moulds and their management strategies. Economics of cultivation, Postharvest technologies.

Equipment and sterilization techniques for culture media, isolation of mother culture, and spawn preparation and maintenance of mushroom beds of Oyster mushroom, *Volvariella* and *Agaricus*. Processing and preservations of mushrooms, economics of spawn and mushroom production and mushroom recipes.

PL PATH 301 Diseases of Vegetable, Ornamental and Spice Crops 3(2+1)

Horticulture - 5th Semester

Etiology, symptoms, mode of spread, epidemiology and integrated management of diseases of the following vegetables, ornamental and spice crops: tomato, brinjal, chilli, bhindi, cucurbits, cabbage, cauliflower, radish, knol-khol, pea, beans, beet root, onion, garlic, fenugreek, ginger, potato, turmeric, pepper, cumin, cardamom, nutmeg, coriander, clove, cinnamon, jasmine, rose, crossandra, tuberose, chrysanthemum, gladiolus, geranium. Important post-harvest diseases of vegetables and ornamental crops and their management.

Practical: Observations of symptoms, causal organisms and host parasitic relationship of important diseases, examination of cultures of important pathogens of vegetables, ornamental and spice crops.

PL PATH 401 Bio-control and Integrated Disease Management 3(1+2)

Agriculture - 7th Semester

History and principles underlying host resistance, chemical, physical, cultural, biological and legislative measures of plant disease management. Scope and factors affecting biological control. Mechanism of bio-control. Characterezation of bioagents and their commercial formulations. Limitaions of bio-control. Commercial production and distribution system. Integrated disease management. Historical developments and classification of fungicides and antibiotics. Mode of action, uptake, translocation, disease control and factors affecting their efficacy and field performance. Registration, commercial development and compatibility of fungicides with other chemicals . General account of plant protection appliances. Development of resistance in pathogens against fungicides. Non-target effects of fungicide use. Methods of screening for disease resistance. Seed certification standards and phytosanitory measures.

Practical: Isolation and Identification of bio-control agents. Evaluation of bio-control agents against plant pathogens *in vitro* and *in vivo.* Production and application procedures. Laboratory evaluation of fungicides and antibiotics against different groups of pathogens. Methods of

application of fungitoxicants. Absorption, translocation and persistence of different fungitoxicants. Integration of bio-control agents with other methods of plant disease control.

PL PATH 402 Mushroom Cultivation 2(0+2)

Agriculture - 7th Semester

Practical: Introduction to mushrooms and mushroom growing. Characteristics of mushrooms and their identification. Cultivation techniques of *Agaricus bisporus, Pleurotus* spp. *Volvariella* spp. and *Calocybe* spp. Processing of raw materials and compost methodology, spawn production and spawning, casing materials, their treatment and use. Crop management practices including control of pathogens. Designing a mushroom house. Project report formulation at farm level.

PL PATH 403 Plant Disease Diagnosis 2(0+2)

Agriculture - 7th Semester

Practical: Field diagnosis of important diseases of *Rabi* and *Kharif* crops, vegetables, fruits , forest and ornamental plants. Estimation of losses and methods for assessing the intensity of diseases like angular leaf spot of cotton, *Tikka* disease of groundnut, yellow mosaic of beans , downy mildew of *bajra*, rusts and loose smut of wheat, Alternaria blight, downy mildew of mustard and powdery mildew of pea. Methods of soil sterilization for raising healthy nursery plants. Solar-heat treatment. Methods of producing virus-free citrus and potato. Diagnosis and differentiation of disorders due to viruses, nutritional imbalances, genetic variations and toxaemias. Types of chemicals used for the control of plant diseases and methods of their application. Cultural and biological methods of plant disease control.

PL PATH 404 Postharvest Diseases and their Management 3(2+1)

Agriculture - 7th Semester

Importance of post-harvest diseases of fruits and vegetables. factors affecting ripening of fruits and vegetables. Factors favoring development of post-harvest diseases. Effect of handling and storage practices on the development of post-harvest diseases. Storage methods and conditions. Disease management strategies for post-harvest diseases.

Practical: Important post-harvest diseases of fruits and vegetables like mango, citrus, guava, grapes, pear, curcurbits, chilli, tomato and potato. Study of factors favoring development of post-harvest diseases. Disease development under different storage conditions. Demonstration of various methods of disease management. Visit to a packing house.

1.8 AGRICULTURAL EXTENSION

EXT 101 Dimensions of Agricultural Extension 2(1+1)

Agriculture & Horticulture - 2nd Semester

Education – Meaning, Definition, Types – Formal, Informal and Non-formal education and their Characteristics. Extension Education and Agricultural Extension – Meaning, Definition, Concepts, Process, Objectives, Philosphy and Principles. Rural development – Meaning, Definition, Concepts, Objectives, Importance and Problems in rural development. Developmental programmes of pre-independence era – Sriniketan, Marthandam, Gurgaon experiment and Gandhian constructive proprogramme. Development programmes of Post independence era, Firka Development, Etawah – Pilot project and Nilokheri Experiment. Community Development Programme – Meaning, Definition, Concepts, Philosophy, Principles, Objectives, Differences between Community Development and Extension Education, National Extension service. Panchayat Raj system – Meaning of Democratic – Decentralization and Panchayat Raj, Three tiers of Panchayat Raj system, Powers, Functions and Organizational setup. Agricultural Development Programmes with reference to year of start, objectives & sailent features – Intensive Agricultural District Programme (IADP), High Yielding Varieties Programme (HYVP), Institution Village Linkage Programme (IVLP), Watershed Development Programme (WDP), National Agricultural Technology Project (NATP), ATMA, ATIC. Transfer of technology programmes like lab to land programme (LLP) national demonstration (ND), front line demonstration (FLD) Krishi Vigyan Kendras (KVK), Technology Assessment and Refinement Programme (TARP) etc. of ICAR.

Social Justice and Poverty alleviation programmes – Integrated Tribal Development Agency (ITDA), Integrated Rural Development Programme (IRDP), Swarna Jayanthi Gram Swarojgar Yojana (SGSY), Pradhan Mantri Rojgar Yojana (PRY). New trends in extension, privatization. Women Development programmes – Development of Women and Children in Rural Areas (DWCRA), Rashtriya Mahila Kosh (RMK), Integrated Child Development Scheme (ICDS) and Mahila Samriddi Yojana (MSY). Reorganized extension system (T&V System), Rashtriya Krishi Vikas Yojna(RKVY), National Food Security Mission(NFSM) – Salient features, Fortnight Meetings, Monthly workshops, Linkages, Merits and Demerits, Emergence of Broad Based Extension (BBE).

Practical: Visits to a village and kisan mandal to study the ongoing development programmes. Visits to Panchayat Raj Institutions to study the functioning of Gram Panchayat (GP) & Zilla Praja Parishad (ZPP). Visit and study the District Rural Development Agency (DRDA). Participation in monthly workshops of Training and Visit (T & V) System. Visit to Watershed Development Project area. Visit to a village to study the Self Help Groups (SHGs) of DWCRA. Visit to a voluntary organization to study the developmental activities. Organizing PRA techniques in a village to identify the agricultural problems. Visit to villages.

EXT 301 Fundamentals of Rural Sociology and Educational Psychology 2(2+0)

Agriculture - 5th Semester

Extension Education and Agricultural Extension – Meaning, Definition, Scope and Importance. Sociology and Rural Sociology, Meaning, Definition, Scope, Importance of Rural Sociology in Agricultural Extension and Interrelationship between Rural Sociology & Agricultural Extension. Indian Rural Society, Important characteristics, Differences and Relationship between Rural and Urban societies. Social Groups – Meaning, Definition, Classification, Factors considered in

formation and organization of groups, Motivation in group formation and Role of Social groups in Agricultural Extension. Social Stratification – Meaning, Definition, Functions, Basis for stratification, Forms of Social stratification – Characteristics and – Differences between Class & Caste System. Cultural concepts – Culture, Customs, Folkways, Mores, Taboos, Rituals and Traditions – Meaning, Definition and their Role in Agricultural Extension. Social Values, Norms and Attitudes – Meaning, Definition, Types and Role of Social Values and Attitudes in Agricultural Extension. Social Institutions – Meaning, Definition, Major institutions in Rural society, Functions and their Role in Agricultural Extension. Social Organizations – Meaning, Definition, Types of organizations and Role of Social organizations in Agricultural Extension. Social Control – Meaning, Definition, Need of social control and Means of Social control. Social change – Meaning, Definition, Nature of Social change, Dimensions of social change and factors of social change. Leadership – Meaning, Definition, Classification, Roles of a leader, Different methods of Selection of Professional and Lay leaders. Training of Leaders – Meaning, Definition, Methods of training, Advantages and Limitations in use of local leaders in Agricultural Extension. Psychology and Educational Psychology – Meaning, Definition, Scope and Importance of Educational Psychology in Agricultural Extension. Intelligence – Meaning, Definition, Types, Factors affecting intelligence and Importance of intelligence in Agricultural Extension. Personality – Meaning, Definition, Types, Factors influencing the Personality and Role of personality in Agricultural Extension. Teaching – Learning process – Meaning and Definition of Teaching, Learning, Learning experience and Learning situation, Elements of learning situation and its characteristics. Principles of learning and their implication for teaching.

EXT 302 Extension Methodologies for Transfer of Agricultural Technology 2(1+1)

Agriculture - 6th Semester

Communication – Meaning, Definition, Models, Elements and their Characteristics, Types and Barriers in communication. Extension Programme Planning – Meaning, Definitions of Planning, Programme, Project, Importance, Principles and Steps in Programme Development Process, Monitoring and Evaluation of Extension Programmes. Extension Teaching methods – Meaning, Definition, Functions and Classification. Individual contact methods – Farm and Home visit, Result Demonstration, Field trials – Meaning, Objectives, Steps, Merits and Demerits. Group contact methods – Group discussion, Method demonstration, Field Trips – Meaning, Objectives, Steps, Merits and Demerits. Small group discussion techniques – Lecture, Symposium, Panel, Debate, Forum, Buzz group, Workshop, Brain Storming, Seminar and Conference. Mass contact Methods – Campaign, Exhibition, Kisan Mela, Radio & Television – Meaning, Importance, Steps, Merits & Demerits. Factors influencing in selection of Extension Teaching Methods and Combination (Media Mix) of Teaching methods. Innovative Information sources – Internet, Cyber Cafes, Video and Tele conferences, Kisan call centers, Consultancy clinics. Agricultural Journalism – Meaning, Scope and Importance, Sources of news, Types, Merits and Limitations. Diffusion and Adoption of Innovations – Meaning, Definition, Models of adoption Process, Innovation – Decision Process – Elements, Adopter categories and their characteristics, Factors influencing adoption process. Capacity building of Extension Personnel and Farmers – Meaning, Definition, Types of training, Training to farmers, farm women and Rural youth – FTC and KVK.

Practical: Simulated exercises on communication. Identifying the Problems, Fixing the Priorities and selecting a most important problem for preparation of a project. Developing a project based on identified problems in a selected village. Organization of Group discussion and Method demonstration. Visit to KVK / FTC. Planning and Writing of scripts for Radio and Television. Audio Visual aids – Meaning, Importance and Classification. Selection, Planning, Preparation, Evaluation and Presentation of visual aids. Planning & Preparation of visual aids – Charts, Posters, Over Head Projector, (OHP) Transparencies, Power Point Slides. Planning and Preparation of Agricultural Information materials – Leaflet, Folder, Pamphlet, News Stories, Success Stories. Handling of Public Address Equipment (PAE) System, Still camera, Video Camera and Liquid Crystal Display (LCD) Projector.

EXT 303 Entrepreneurship Development and Communication Skills 2(1+1)

Agriculture & Horticulture - 6th Semester

Entrepreneurship Development: Assessing overall business environment in the Indian economy. Overview of Indian social, political and economic systems and their implications for decision making by individual entrepreneurs. Globalization and the emerging business / entrepreneurial environment. Concept of entrepreneurship; entrepreneurial and managerial characteristics; managing an enterprise; motivation and entrepreneurship development; importance of planning, monitoring, evaluation and follow up; managing competition; entrepreneurship development programs; SWOT analysis, Generation, incubation and commercialization of ideas and innovations. Government schemes and incentives for promotion of entrepreneurship. Government policy on Small and Medium Enterprises

(SMEs) / SSIs. Export and Import Policies relevant to agriculture sector. Venture capital. Contract farming and joint ventures, public-private partnerships. Overview of agri inputs industry. Characteristics of Indian agricultural processing and export industry. Social Responsibility of Business. Communication Skills: Structural and functional grammar; meaning and process of communication, verbal and non-verbal communication; listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, précis writing, summarizing, abstracting; individual and group presentations, importance of presentation, public speaking; Group discussion. Organizing seminars and conferences.

Practical: Listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, précis writing, summarizing, abstracting; individual and group presentations.

1.9 CROP PHYSIOLOGY

BOT 101 Introductory Crop Physiology 2(1+1)

Horticulture – 2nd Semester

Introduction, Importance in Agriculture. Crop Water Relations, Physiological importance of water to plants, Osmosis, Imbibition and Diffusion Water potential and its components, measurement of water status in plants. Transpiration, significance, Transpiration in relation to crop productivity, Water Use Efficiency, WUE in C_3, C_4 and CAM plants. Factors affecting WUE. Photosynthesis, Energy synthesis, Significance of C_3, C_4 and CAM pathway. Relationship of Photosynthesis and crop productivity, Photorespiration, Factors affecting Photosynthesis and productivity, Methods of measuring photosynthesis, Photosynthetic efficiency, Respiration and its significance, Brief account of Growth respiration and maintenance respiration, Nutrition physiology – Definition – Mengel's classification of plant nutrients – Physiology of nutrient uptake – Functions of plant nutrients – Deficiency and toxicity symptoms of plant nutrients – Foliar nutrition – Hydroponics. Introduction of Photoperiodism and Vernalisation in relation to crop productivity. Plant Growth Regulators – Occurrence – Biosynthesis – Mode of action of Auxins, Gibberellins, Cytokines, ABA, Ethylene. Commercial application of plant growth regulators in agriculture.

Practical: Preparation of solutions; Methods of measuring water status in roots, stems and leaves; Measurement of water potential by Chardakov's method; Measurement of absorption spectrum of chloroplastic pigments and fluorescence; Stomatal frequency and index-Respirometer – Measurement of respiration; Leaf anatomy of C3 and C4 plants; Measurement of transpiration; Osmosis, importance of light and chlorophyll in photosynthesis. Imbibition of seed.

BOT 201 Crop Physiology 3(2+1)

Agriculture - 3rd Semester

Introduction, Importance in Agriculture. Seed Physiology, Seed Structures, Morphological, Physiological and biochemical changes during seed development, Physiological maturity-Morphological and Physiological changes associated with physiological maturity in crop, Harvestable maturity, seed viability and vigour, factors affecting seed viability and vigour. Method of testing seed viability and vigour, Germination, Utilization of seed reserves during seed germination, Morphological, Physiological and biochemical changes during seed germination , Factors affecting seed germination. Growth and development, Definition, Determinate and intermediate, growth, Monocarpic and Polycarpic species with examples. Measurement of growth, Growth analysis Growth characteristics, Definition and Mathematical formulae. Crop water Relations, Physiological importance of water to plants, Water potential and its components, measurement of water status in plants. Transpiration, significance, Transpiration in relation to crop productivity, Water use Efficiency, WUE in C_3, C_4, and CAM plants, factors affecting WUE. Photosynthesis, Energy Synthesis, Significance of C_3, C_4 and CAM pathway, relationship of Photosynthesis and crop productivity, Translocation of assimilates, phloem loading apoplastic and symplastic transport of assimilates, Source and sink concept, photorespiration, factor affecting Photosynthesis and productivity, methods of measuring photosynthesis, photosythetic efficiency, Dry matter partitioning, Harvest index of crops. Respiration and its significance, Brief account of Growth respiration and maintenance respiration. Alternate respiration-Salt respiration-wound respiration-measurement of respiration. Nutriophysiology-Defination-Mengel's classification of plant nutrients- Physiology of nutrient

uptake- function of plant nutrients- Deficience and toxicity symptoms of plant nutrients – Foliar nutrition – Hydroponics. Introduction of Photoperiodism and Vernalisation in relation to crop productivity – Photoperiodism Plant Growth regulators – Occurance-Biosynthesis-Mode of action of Auxins,Gibberallins, Cytokinins, ABA, Ethylene. Novel plant growth regulators, Commercial application of plant growth regulators in agriculture. Senescence and abscission – Definition – classification- theories of mechanism and control of senescence- Physiological and biochemical changes and their significance. Postharvest Physiology – seed dormancy-definition- types of seed dormancy – advantage and disadvantage of seed dormancy – causes and remedial measures for breaking seed dormancy, Optimum condition of seed storage-Factor influencing seed storage (ISTA standards). Fruit ripening- Metamorphic changes- Climacteric and non climacteric fruits- hormonal regulation of fruit ripening (with ethrel, CCC, Polaris, paclabuterazole).

Practical: Preparation of solutions; growth analysis: calculation growth parameters; Method of measuring water status in roots, stems and leaves; Measurement of water potential by Chardakov's method; measurement of absorption spectrum of chloroplastic pigments and fluorescence; measurement of leaf area by various methods; Stomatal frequency and index, Respirometer – Measurement of respirometer; Leaf anatomy of C_3 and C_4 plants; Transpiration of measurement; imbibition of seed; Optimum condition for seed germination; braking seed dormancy; (a) Chemical method (b) Mechanical method; Yield analysis; Seed viability and vigour tests; Effect of Ethylene on regulation of stomata.

BOT 202 Growth and Development of Horticultural Crops 2(1+1)

Horticulture – 3rd Semester

Growth and development-definitions, components, photosynthetic productivity, leaf area index (LAI) - optimum LAI in horticultural crops, canopy development; different stages of growth, growth curves, growth analysis in horticultural crops. Plant bioregulators- auxin, gibberellin, cytokinin, ethylene inhibitors and retardants, basic functions, biosynthesis, role in crop growth and development, propagation, flowering, fruit setting, fruit thinning, fruit development, fruit drop, and fruit ripening. Flowering-factors affecting flowering, physiology of flowering, photoperiodism-long day, short day and day neutral plants, vernalisation and its application in horticulture, pruning and training physiological basis of training and pruning, source and sink relationship, translocation of assimilates. Physiology of seed development and maturation, seed dormancy and bud dormancy, causes and breaking methods in horticultural crops. Physiology of fruit growth and development, fruit setting, factors affecting fruit set and development, physiology of ripening of fruits-climacteric and non-climacteric fruits.

Practical: Estimation of photosynthetic potential of horticultural crops, leaf area index, growth analysis parameters including harvest index, bioassay of plant hormones, identification of synthetic plant hormones and growth retardants, preparations of hormonal solution and induction of rooting in cuttings, ripening of fruits and control of flower and fruit drop. Important physiological disorders and their remedial measures in fruits and vegetables, rapid tissue test, seed dormancy, seed viability by tetrazolium test, seed germination and breaking seed dormancy with chemicals and growth regulators.

1.10 STATISTICS AND SOCIAL SCIENCE

STAT 301 Elementary Statistics 2(1+1)

Agriculture & Horticulture - 5th Semester

Introduction: Definition of Statistics and its Use and Limitations; Frequency Distribution and Frequency Curves; Measure of central Tendency: Characteristics of Ideal average, Arithmetic mean, Median, Mode, and its Merits and Demerits; Measure of Dispersion: Standard Deviation, Variance and Coefficient of Variation; Probability: Definition and Concept of Probability; Normal Distribution and its Properties; Introduction to Sampling: Random sampling, Concept of Standard Error; Tests of Significance: Types of Errors, Null Hypothesis, Level of Significance and Degrees of Freedom, Steps involved in Testing of Hypothesis; Large sample Test: SND Test for Means - Single Sample & Two Samples (all types), Small Sample Test for Means - Students' t-test for Single Sample, Two Samples and Paired t-test, F-test, Chi-Square test in 2x2 Contingency Table, Yates' Correction for Continuity; Correlation and Regression: Types of Correlation and Identification through Scatter Diagram, Correlation Coefficient, Computation of Correlation Coefficient 'r' and its Testing, Regression Coefficient, Linear Regression of Y on X and X on Y, Inter-relation between Correlation Coefficient 'r' and Regression Coefficient, Fitting of Linear Regression Equation; Experimental Designs: Basic Designs; Completely Randomized Design (CRD), Layout and Analysis with Equal and Unequal number of Observations, Randomized Block Design (RBD), Layout and Analysis, Latin Square Design (LSD), Layout and Analysis.

Practical: Construction of Frequency Distribution Tables and Frequency Curves; Computation of Arithmetic Mean, Median and Mode for Ungrouped and Grouped data; Computation of Standard Deviation, Variance and Coefficient of Variation for Ungrouped and Grouped data; SND test for Means - Single Sample and Two Samples; Students' t-test for Single Sample and Two Samples; Paired t-test; F test and Chi-Square test in 2x2 Contingency Tables, Yates' Correction for Continuity; Computation of Correlation Coefficient 'r' and its testing; Regression Coefficient; Completely Randomized Design (CRD), Layout and Analysis with Equal and Unequal number of Observations, Randomized Block Design (RBD), Layout and Analysis, Latin Square Design (LSD), Layout and Analysis.

1.11 Courses of other Disciplines

(a) Animal Production

LPM 301 Livestock Production and Management 3(2+1)

Agriculture – 5th Semester

Place of livestock in the national economy, different livestock development programmes of Govt. of India. Important exotic and Indian breeds of cattle, buffalo, sheep, goat and swine. Measures and factors affecting fertility in livestock, reproductive behaviour like oestrus, parturition, farrowing etc. Milk secretion, milking of animals and factors affecting milk yield and composition. Selection and breeding of livestock for higher milk and meat production. Feeding and management of calves, growing heifers and milch animals and other classes and types of animals, housing principles, space requirements for different species of livestock. Disease control measures, sanitation and care, breeding, feeding and production records. Breed characteristics of poultry, their methods of rearing, breeding, feeding and management, incubation, hatching and brooding, vaccination and prevention of diseases, preservation and marketing of eggs, its economics and keeping quality. Cost of production of milk, economical units of cattle, buffalo, sheep, goat and swine.

Practical: Identification, handling and restraining of animals; Judging and culling; Feeding and ration formulation; Hatching, housing and management of poultry; Visit to livestock farms and Economics of livestock production.

(b) Agrometreology

AGROMET 101 Principles of Agronomy and Agricultural Meteoreology 3(2+1)

Agriculture - 1st Semester

Meaning and scope of Agronomy: National and International Agricultural Research Institutes in India, Agro-climatic zones of India and Uttar Pradesh. Tillage, crops stand establishment, planting geometry and its effect on growth and yield, cropping systems, harvesting. Agricultural meteorology: Weather and climate, micro-climate, weather elements, Earths' atmosphere, composition and structure, solar radiation, nature, properties, depletion, solar constant and energy balance; Atmospheric temperature, factors affecting horizontal and vertical distribution, variations and global warming. Air Pressure variations; Wind: factors affecting, cyclones and anticyclones and general circulation; Atmospheric humidity, vapour pressure and saturation, Process of condensation, formation of dew, fog, mist, snow, rain and hail; Formation and classification of clouds; Introduction to monsoon, Basics of weather forecasting.

Practical: Study of tillage implements; Practice of ploughing; Practice of puddling; Study of seeding equipments and introduction of remote sensing. Different methods of sowing; Study of manures, fertilizers and green manure crops / seeds (including calculations); Study of inter-cultivation implements and practice; Practice of methods of fertilizer applications; Participation in ongoing field operations; Site selection for Agromet observatory; Measurement of temperature; Measurement of rainfall; Measurement of evaporation (atmospheric/soil); Measurement of atmospheric pressure; Measurement of sunshine duration and solar radiation; Measurement of wind direction and speed and relative humidity; Study of weather forecasting and synoptic charts.

(c) Environmental Science

ENV 301 Environmental Science 2(1+1)

Agriculture & Horticulture - 6th Semester

Environment: introduction, definition and importance. Components of environment - interactions with organisms. Global and Indian environment - past and present status. Environmental pollution and pollutants. Air, water, food, soil, noise pollution - sources, causes and types. Smog, acid rain, global warming, ozone hole, eutrophication, sewage and hazardous waste management. Impact of different pollutions on humans, organisms and environment. Introduction to biological magnification of toxins. Deforestation - forms and causes, relation to environment. Prevention and control of pollution - technological and sociological measures and solutions - Indian and global efforts. India, international and voluntary agencies for environmental conservation - mandates and activities. International conferences, conventions and summits - major achievements. Environmental policy and legislation in India. Introduction to environmental impact assessment. Causes of environmental degradation - socio-economic factors. Human population growth and lifestyle.

Practical: Visit to local areas - river/forest/grassland/catchment etc. to document components of ecosystem. Study of common plants, insects, birds and animals. Visit to industries to study pollution abatement techniques.

(d) Computer Applications

CSE 101 Introduction to Computer Applications 2(1+1)

Agriculture - 2nd Semester; Horticulture – 1stSemester

Introduction to Computers, Anatomy of Computers, Input and Output Devices. Units of Memory, Hardware, Software and Classification of Computers. Personal Computers, Types of Processors, booting of computer, warm and cold booting. Computer Viruses, Worms and Vaccines. Operating System – DOS and WINDOWS. Disk Operating System (DOS): Some fundamental DOS Commands, FORMAT, DIR, COPY, PATH, LABEL, VOL, MD, CD and DELTREE, Rules for naming files in DOS and Types of files. WINDOWS: GUI, Desktop and its elements, WINDOWS Explorer, working with files and folders; setting time and date, starting and shutting down of WINDOWS. Anatomy of a WINDOW, Title Bar, Minimum, Maximum and Close Buttons, Scroll Bars, Menus and Tool Bars. Applications – MSWORD: Word, processing and units of document, features of word-processing packages. Creating, Editing, Formatting and Saving a document in MSWORD; MSEXCEL: Electronic Spreadsheets, concept, packages. Creating, Editing and Saving a spreadsheet with MSEXCEL. Use of in-built Statistical and other functions and writing expressions. Use of Data Analysis Tools, Correlation and Regression, t-test for two-samples and ANOVA with One-way Classification. Creating Graphs. MS Power Point: Features of Power Point Package. MSACCESS: Concept of Database, Units of database, creating database; Principles of Programming: Flow Charts and Algorithms, illustration through examples. Internet: World Wide Web (WWW), Concepts, Web Browsing and Electronic Mail.

Practical: Study of Computer Components; Booting of Computer and its Shut Down; Practice of some fundamental DOS Commands, TIME, DATE, DIR, COPY, FORMAT, VOL, LABEL,

PATH; Practicing WINDOWS Operating System, Use of Mouse, Title Bar, Minimum, Maximum and Close Buttons, Scroll Bars, Menus and Tool Bars; WINDOWS Explorer, Creating Folders, COPY and PASTE functions; MSWORD: Creating a Document, Saving and Editing; MSWORD, Use of options from Tool Bars, Format, Insert and Tools (Spelling & Grammar) Alignment of text; MSWORD, Creating a Table, Merging of Cells, Column and Row width; MSEXCEL: Creating a Spreadsheet, Alignment of rows, columns and cells using Format tool bar; MSEXCEL: Entering Expressions through the formula tool bar and use of inbuilt functions, SUM, AVERAGE, STDEV; MSEXCEL: Data Analysis using inbuilt Tool Packs, Correlation & Regression; MSEXCEL: Creating Graphs and Saving with & without data; MSACCESS: Creating Database, Structuring with different types of fields; MS Power Point: Preparation of slides on Power Point; Transforming the data of WORD, EXCEL and ACCESS to other formats; Internet Browsing: Browsing a Web Page and Creating of E-Mail ID.

(e) ENGLISH

ENG 101 Structural Grammar and Spoken English (NC) 2(1+1)

Agriculture & Horticulture - 1st Semester

Comprehension**:** Text for comprehension, Current English for Colleges, By N.Krishnaswamy & T.Sriraman, Macmillan India Limited, Madras, 1995; War Minus shooting – The sporting spirit George Orwell (a) Reading Comprehension (b) Vocabulary – Synonyms – Antonyms – Often confused words and (c) Two exercises to help the students in the enrichment of vocabulary based on TOEFL and GRE and other competitive examinations. A Dilemma – A layman looks at science Raymond B. Fosdick (a) Reading Comprehension (b) Vocabulary – Homonyms and Homophones (c) Exercises on Figurative Language & Idiomatic Language (E.g.: dust and ashes, doorstep of doom, boundaries of knowledge, Apple of one' s eye, in a fix etc). 5&6 You and Your English – Spoken English and Broken English G.B.Shaw (a) Reading Comprehension (b) Language study, Functional Grammar, Agreement of verb with subject. Written Skills: Mechanics of good letter, Effective business correspondence, Personal Correspondence. Preparation of Curriculum vitae and Job applications. The Style, Importance of professional writing –Choice of words and Phrases, precision, conciseness clichés, redundancy, jargon, foreign words. Precis writing and synopsis writing. Interviews, Types of interviews, purpose, different settings, as interviewer, interviewee, physical make up and manners, appearance, poise, speech, self reliance, Evaluation process. Review or feedback.

Practical: Listening Comprehension: Listening to short talks, lectures, speeches (scientific, commercial and general in nature) Practical: listening to at least two tape, recorded conversations aimed at testing the listening comprehension of students; Communication: Spoken English, oral communication, importance stress and intonation. Practical: Spoken English practice by using audiovisual aids, the essentials of good conversations, oral exercises in conversation practice (At the Doctor, at the Restaurant, at the Market Yard); Oral Presentation of Reports: Seminars and conferences, features of oral presentation, regulating speech, physical appearance, body language posture, eye contact, voice, audience, preparation of visual aids. Practical: One presentation by individual on the given topic related to agriculture like W.T.O, Developing new technologies in

Agriculture, Bio fertilizers etc.; Evaluation of a Presentation: evaluation sheet, other strategies to be considered for evaluating a presentation, Practical: Mock evaluation of a presentation; Dyadic communication, face to face conversation, Telephonic conversation, rate of speech, clarity of voice, speaking and listening politeness, telephone etiquette, Practical: Practice of Telephonic conversation; Reading skills, using Dictionary, reading dialogues, rapid reading, intensive reading, improving reading skills; Meetings: purpose, procedure participation, chairmanship, physical arrangements, recording minutes of meeting; Practice of Presentation by using power point and LCD projector; Conducting Mock interviews – testing initiative, team spirit, leadership, intellectual ability – potential for development, memory, motivation, objectives, aptitude etc., Group Discussions and Debates on current topics; Review or Feed Back; Practical examination.

(f) NSS/NCC/PHYSICAL EDUCATION

NSO 101 Physical Education (NC) 1(0+1)

Agriculture & Horticulture - 2nd Semester

Practical: Physical Education: Introduction to physical education. Posture, exercise for good posture, physical fitness exercises for agility, strength, coordination, endurance and speed. Rules regulations of important games, skill development in any one of the games, football, hockey, cricket, volleyball, badminton, throw ball, tennis. Participation in one of the indoor games, badminton, chess and table tennis. Rules and regulations of athletic events, participation in any one of the athletic events, long jump, high jump, triple jump, javelin throw, discuss throw, shot put, short and long distance running, Safety education, movement education, effective way of doing day-to-day activities. First-aid training, coaching for major games and indoor games. Asans and indigenous ways for physical fitness and curative exercises. Exercises and games for leisure time, use and experience.

NOTE:- Warming up and conditioning exercises are compulsory before the commencement of each class

2. COLLEGE OF HORTICULTURE

2.1 FRUIT SCIENCE

FRUIT SC 101 Fundamentals of Horticulture 3(2+1)

Horticulture & Agriculture - 1st Semester

Importance and classification of horticultural crops and their area and production, exports and imports, fruit and vegetable zones of India and of different states, nursery management practices, soil and climate, vegetable gardens, kitchen garden and other types of gardens. Planning and layout, management of orchards, planting systems and planting densities. Production and practices for fruit, vegetable and floriculture crops, nursery techniques and their management. Principles and methods of pruning and training of fruit crops, types and use of growth regulators in horticulture, water management, weed management, fertility management in horticultural crops, cropping systems, intercropping, multi-tier cropping, mulching, bearing habits, factors influencing the fruitfulness and unfruitfulness. Rejuvenation of old orchards.

Practical: Planning and layout of orchard, tools and implements, preparation of nursery beds for sowing of vegetable seeds, digging of pits for fruit plants, planting systems, training and pruning of orchard trees, preparation of fertilizer mixtures and field application, preparation and application of growth regulators, layout of different irrigation systems, identification and management of nutritional disorder in fruits and vegetables, assessment of bearing habits, maturity standards, harvesting, grading, packaging and storage.

FRUIT SC 102 Plant Propagation and Nursery Management 2(1+1)

Horticulture - 1st Semester

Propagation: Need and potentialities for plant multiplication, sexual and asexual methods of propagation, advantages and disadvantages. Seed dormancy, scarification & stratification, internal and external factors, nursery techniques, apomixis – mono-embrony, polyembrony, chimera & bud sport. Propagation structures: Mist chamber, humidifiers, greenhouses, glasshouses, cold frames, hot beds, poly-houses, use of growth regulators in seed and vegetative propagation, methods and techniques of cutting, layering, grafting and budding, physiological & bio-chemical basis of rooting, factors influencing rooting of cuttings and layering, graft incompatibility. Anatomical studies of bud union, selection and maintenance of mother trees, scion-stock relationship and their influences, bud wood certification, techniques of propagation through specialized organs, corm, runners, suckers. Micrografting, hardening of plants in nurseries. Nursery registration act. Insect/pest/disease control in nursery.

Practical: Media for propagation of plants in nursery beds, pot and mist chamber. Preparation of nursery beds and sowing of seeds. Raising of rootstock. Seed treatments for breaking dormancy and inducing vigorous seedling growth. Hardening plants in the nursery. Practicing different types of cuttings, layering, graftings and buddings etc. Use of mist chamber in propagation and hardening of plants. Preparation of plant growth regulators for seed germination and vegetative

propagation. Visit to a tissue culture laboratory. Digging and filling of pits, labeling and packing of fruit plants. Maintenance of nursery records. Use of different types of nursery tools and implements for general nursery and virus tested plant material in the nursery. Cost of establishment of a mist chamber, greenhouse, glasshouse, polyhouse and their maintenance. Top working, bridge grafting and nursery management.

FRUIT SC 103 Tropical and Subtropical Fruits 3(2+1)

Horticulture - 2nd Semester

Horticultural classification of fruits including genome classification. Horticultural zones of India, detailed study of area, production and export potential, varieties, climate and soil requirements, propagation techniques, planting density and systems, after care, training and pruning. Management of water, nutrient and weeds, special horticultural techniques including plant growth regulators, their solution preparation and use in commercial orchards. Physiological disorders. Post-harvest technology, harvest indices, harvesting methods, grading, packaging and storage of the following crops. Mango, banana, bael, grapes, citrus, papaya, sapota, guava, pineapple, jackfruit, avocado, mangosteen, litchi, carambola, durian and passion fruit. Bearing in mango and citrus, causes and control measures of special production problems, alternate and irregular bearing, its control measures. Seediness and kokkan disease in banana, citrus decline and casual factors and their management. Bud forecasting in grapes, sex expression and seed production in papaya, latex extraction and crude papain production. Rainfed horticulture, importance and scope of arid and semi-arid zones of India. Characters and special adaptation of crops: ber, aonla, annona, jamun, wood apple, bael, pomegranate, carissa, date palm, phalsa, fig, west Indian cherry and tamarind.

Practical: Description and identification of varieties based on flower and fruit morphology in above crops. Training and pruning of grapes, mango, guava and citrus. Selection of site and planting system, pre-treatment of banana suckers, desuckering in banana, sex forms in papaya. Use of plastics in fruit production. Visit to commercial orchards and diagnosis of maladies. Manure and fertilizer application including bio-fertilizers in fruit crops, preparation and application of growth regulators in banana, grapes and mango. Seed production in papaya, latex extraction and preparation of crude papain. Ripening of fruits, grading and packaging, production economics for tropical and sub-tropical fruits. Mapping of arid and semi-arid zones of India. Botanical description and identification of ber, fig, jamun, pomegranate, carissa, phalsa, wood apple, west Indian cherry, tamarind, aonla, bael and annona.

FRUIT SC 104 Water Management in Horticultural Crops 2(1+1)

Horticulture - 2nd Semester

Water resources in India. Area of different crops under irrigation, function of water for plant growth, effect of moisture stress on crop growth. Available and unavailable soil moisture, distribution of soil moisture, water budgeting, rooting characteristics, moisture extraction pattern. Water requirement of horticultural crops, lysimeter studies, plant water potential climatological approach, use of pan evaporimeter, factor for crop growth stages, critical stages of

crop growth for irrigation. Irrigation scheduling, different approaches, methods of irrigation, surface and sub-surface pressurized methods viz., sprinkler and drip irrigation, their suitability, merits and limitations, fertigation, economic use of irrigation water. Water management problem, soils quality of irrigation water, irrigation management practices for different soils and crops. Layout of different irrigation systems, drip, sprinkler. Layout of underground pipeline system.

Practical: Measurements of irrigation water by using water measuring devices, use of common formula in irrigation practices, practicing of land leveling and land shaping implements, layout for different methods of irrigation. Estimation of soil moisture constants and soil moisture by using different, methods and instruments, scheduling of irrigation, different approaches, practicing use of instruments, estimation of irrigation efficiency and water requirements of horticultural crops, irrigation planning and scheduling, soil moisture conservation practices.

FRUIT SC 201 Production Technology of Spices, Aromatic, Medicinal and Plantation Crops 3(2+1)

Agriculture - 4th Semester

Importance and cultivation technology of Spices – ginger, turmeric, pepper, cardamom, coriander, cumin, fenugreek; Aromatic crops – lemon grass, citronella, palmarosa, vetiver, geranium, dawana; Plantation crops –tea, coconut, arecanut, betelvine, cashew, cocoa, coffee, oilpalm; Medicinal plants – dioscorea, rauvolfia, opium, ocimum, perwinkle, aloe, guggul, belladonna, nuxvomica, *Solanum khasiamum* , aonla,senna, plantago, stevia,coleus and acorus.

Practical: Botanical description and identification of aromatic plants; Identification of varieties in spices and plantation crops; Identification of medicinal plants; Selection of mother palm and seed nuts in coconut and oil palm; Distillation procedures for aromatic crops; Propagation methods in plantation crops; Propagation and planting methods in turmeric; Propagation and planting techniques in ginger; Harvesting procedures in aromatic plants; Processing and curing of spices (ginger, turmeric and black pepper); Products – byproducts of spices and plantation crops; Visit to local commercial plantations. Aromatic & medicinal plant nurseries and seed spices field.

FRUIT SC 202 Temperate Fruits 2(1+1)

Horticulture - 3rd Semester

Classification of temperate fruits, detailed study of areas, production, varieties, climate and soil requirements, propagation, planting density, cropping systems, after care, training and pruning, self incompatibility and pollinisers, use of growth regulators, nutrient and weed management, harvesting, post-harvest handling and storage of apple, pear, peach, plum, apricot, cherry, persimmon, strawberry, kiwi, Queens land nut (Mecademia nut), almond, walnut, pecan nut, hazel nut and chest nut. Re- plant problem, rejuvenation and special production problems like pre-mature leaf fall, physiological disorders, important insect – pests and diseases and their control measures.

Practical: Nursery management practices, description and identification of varieties of above crops, manuring and fertilization, planting systems, preparation and use of growth regulators,

training and pruning in apple, pear, plum, peach and nut crops. Visit to private orchards to diagnose maladies. Working out economics for apple, pear, plum and peach.

FRUIT SC 203 Plantation Crops, Spices and Condiments 3(2+1)

Horticulture - 4th Semester

History and development, scope and importance, area and production, export and import potential, role in national and state economy, uses, industrial importance, by products utilization, soil and climate, varieties, propagation: principles and practices of seed, vegetative and micro-propagation, planting systems and methods, gap filling, systems of cultivation, mulching, shade regulation, weed and water management, training, pruning and handling, nutrition, foliar feeding, role of growth regulators, soil management, liming practices, tipping practices, top working, physiological disorders, harvesting, post-harvest handling and processing, packaging and marketing, yield and economics of coconut, arecanut, oil palm, palmyrah palm, cacao, cashew nut, coffee, tea and rubber. Cardamom (small & large), pepper, ginger, turmeric, clove, nutmeg, cinnamon, all spice, curry leaf, coriander, fenugreek, fennel, cumin, dill, celery, bishops weed, saffron, vanilla, thyme and rosemary.

Practical: Description and identification of coconut varieties, selection of coconut and arecanut mother palms and seed nut, planting of seed nuts in nursery, layout and planting of coconut, arecanut, oil palm, cashew nut, cacao gardens, manuring, irrigation; mulching, raising nursery for palms, nursery management in cacao. Description and identification of species and varieties in coffee, harvesting, grading, pulping, fermenting, washing, drying and packing of coffee, seed berry collection, seed extraction, treatment and sowing of coffee. Epicotyl, softwood grafting and top working in cashew, working out the economics and project preparation for coconut, arecanut, oil palm, cashew nut, cacao, etc. Mother plant selection, preparation of cuttings and rooting of tea under specialized structure, training, centering, pruning, tipping and harvesting of tea.

FRUIT SC 204 Breeding of Fruit and Plantation Crops 3(2+1)

Horticulture - 4th Semester

Fruit breeding-History, objectives, importance in fruit production, centres of origin, introduction, germplasm conservation, biodiversity, distribution, domestication and adaptation of commercially important fruits, variability for economic traits, breeding strategies, clonal selection, bud mutations, mutagenesis and its application in crop improvement – policy manipulations – *in vitro* breeding tools- important fruits and plantation crops.

Practical: Exercises on floral biology, pollen viability; emasculation and pollination procedures; hybrid seed germination; raising and evaluation of segregating populations; use of mutagens to induce mutations and polyploidy.

FRUIT SC 205 Orchard Management 2(1+1)

Horticulture - 4th Semester

Orchard management, importance, objectives, merits and demerits, clean cultivation, sod culture, Sod mulch, herbicides and inorganic and organic mulches. Tropical, sub-tropical and temperate horticultural systems, competitive and complimentary effect of root and shoot systems. Biological efficiency of cropping systems in horticulture, systems of irrigation. Soil management in relation to nutrient and water uptake and their effect on soil environment, moisture, organisms and soil properties. Integrated nutrient and pest management. Utilization of resources & constraints in existing systems. Crop model and crop regulation in relation to cropping systems.

Practical: Layout of different systems of orchard soil management, clean, inter, cover and mixed cropping, fillers. Use of mulch materials, organic and inorganic mulch, moisture conservation, weed control. Layout of various irrigation systems.

FRUIT SC 301 Medicinal and Aromatic Crops 3(2+1)

Horticulture - 5th Semester

History, scope, opportunities and constraints in the cultivation and maintenance of medicinal and aromatic plants in India. Importance, origin, distribution, area, production, climatic and soil requirements, propagation and nursery techniques, planting and after care, cultural practices, training and pruning, nutritional and water requirements. Plant protection, harvesting and processing of under mentioned important medicinal and aromatic plants. Study of chemical composition of a few important medicinal and aromatic plants, extraction, use and economics of drugs and essential oils in medicinal and aromatic plants. Therapeutic and pharmaceutical uses of important species. Medicinal Plants: Betelvine, periwinkle, Rauvolfia, Dioscorea, Isabgol, *Ammi majus*, Belladonna, Cinchona, Pyrethrum and other species relevant to local conditions. Aromatic Plants: Citronella grass, khus grass, *flag* (baje), lavender, geranium, patchouli, bursera, brahmi, musk, *Ocimum* and other species relevant to the local conditions.

Practical: Collection of medicinal and aromatic plants from their natural habitat and study of their morphological description, nursery techniques, harvesting, curing and processing techniques and extraction of essential oils.

FRUIT SC 302 Horti-Business Management 2(2+0)

Horticulture - 6th Semester

Farm management - definition, nature, characteristics and scope. Farm management principles and decision making, production function, technical relationships, cost concepts, curves and functions – factors, product, relationship – factors relationship, product relationship, optimum conditions, principles of opportunity cost-equi-marginal returns and comparative advantages, time value of money, economics of scale, returns to scale, cost of cultivation and production, break even analysis, decision making under risk and uncertainty. Farming systems and types. Planning – meaning, steps and methods of planning, types of plan, characteristics of effective plans. Organizations – forms of business organizations, organizational principles, division of labour. Unity of command, scalar pattern, job design, span of control responsibility, power authority and accountability. Direction – guiding, leading, motivating, supervising, coordination – meaning, types and methods of controlling – evaluation, control systems and devices.

Budgeting as a tool for planning and control. Record keeping as a tool of control. Functional areas of management – operation's management – physical facilities, implementing the plan, scheduling the work, controlling production in terms of quantity and quality. Materials management – types of inventories, inventory costs, managing the inventories, economic order quantity (EOQ). Personnel management – recruitment, selection and training, job specialization. Marketing management – definitions, planning the marketing programmes, marketing mix and four P' s. Financial management – financial statements and rations, capital budgeting. Project management – project preparation evaluation measures.

FRUIT SC 303 Postharvest Management and Value Addition of Fruits and Vegetables 2(1+1)

Horticulture & Agriculture - 5th Semester

Importance of Postharvest technology in horticultural crops. Maturity indices. Harvesting and Postharvest handling of fruits and vegetables. Pre-harvest factors affecting quality of post harvest shelf life of fruits and vegetables. Maturity and ripening process, Factors responsible for detioration of harvested fruits and vegetables. Factors affecting ripening of fruits and vegetables. Chemicals used for hastening and delaying ripening of fruits and vegetables. Methods of storage – pre-cooling, prestorage treatments, low temperature storage, controlled atmospheric storage, hypobaric storage, irradiation, low cost storage structure. Various methods of packing, packaging materials and transport. Packing technology for export. Fabrication, types of containers, cushioning material, vacuum packing, poly shrink packing, specific packing for mango, banana, grapes, kinnow, sweet orange, aonla, strawberry and mandarin etc. Principle and methods of preservation: heat, High temperature (Pasteurization and Sterilization), Low temperature, Chemicals, Fermentation. Preservation through canning, bottling, freezing, dehydration, drying, ultraviolet and ionizing radiations. Unit layout – selection of site and precautions for hygienic conditions of the unit. Food colors, Food additives, Food flavors, Browning reactions. Preparation of jam, jelly and marmalade, candies, crystallized and glazed fruits, preserves, chutney, pickles, ketchup, sauce, puree, syrups, juices, squash, ready-to-serve (RTS) and cordials. Spoilage, food standards and labeling.

Practical: Practice in judging the maturity of various fruits and vegetables. Determination of physiological loss in weight (PLW), total soluble solids (TSS), total sugars, acidity and ascorbic acid content in fruits and vegetables. Packing methods and types of packing and importance of ventilation. Pre-cooling packing methods for export or international trade. Methods of prolonging storage life. Effect of ethylene on ripening of banana, sapota, mango. Identification of equipment and machinery used in processing and preservation of fruits and vegetables. Preservation by drying and dehydration. Preparation of jam, jelly, marmalade, squash, RTS , cordial, syrup, chutney, sauce, pickles and ketchup. Visit to local processing units, local market, cold storage units and packing industry.

FRUIT SC 401 Commercial Fruit Production 3(1+2)

Agriculture - 7th Semester

Importance and uses, botany, flowering and fruiting, climate and soil, promising varieties, horti-agri techniques, production, plant protection measures and special problems in fruits such as citrus, mango, guava, apple, pear, peach, plum, ber, litchi, grapes, pomegranate, papaya, pineapple, phalsa, banana and sapota.

Practical: Identification of species and fruit varieties, training and pruning, maturity standards, harvesting, handling, grading and packing of fruits. Project formulation and valuation of orchard management.

FRUIT SC 402 Nursery Management of Horticultural Crops 4(1+3)

Agriculture - 7th Semester

Principles of plant propagation. Seed dormancy and germination. Selection of rootstock and scion. Stock scion relationship. Factors affecting successful propagation. Physiology of dwarfing rootstock. Different methods of propagation like division, cutting, layering, budding and grafting, and tissue culture. Containers, media and mixtures. Propagation structures. Nursery act, quarantine and certification. Nutrient management and plant protection measures in nursery. Economics of raising fruit plant nursery.

Practical: Raising of rootstock. Methods to break seed dormancy. Propagation techniques. Training,lifting and packing of nursery plants. Preparation of media and mixtures and raising nursery in poly bags. Project formulation and valuation of nursery raising.

FRUIT SC 403 Processing and Value Addition of Horticultural Crops 3(1+2)

Agriculture - 7th Semester

Scope of fruit preservation industry in India, present status, constraints and prospects. Importance, principles and practices of fruit processing. Maturity indices, harvesting, transportation and quality parameters of fruits. Pre and post harvest factors affecting processing quality of fruits. Commercial processing technologies for fruits like mango, citrus, guava, grapes, ber, apple, pear, peach, plum, phalsa, litchi, pomegranate and papaya etc. Packing technology for export and value addition.

Practical: Judging of maturity of different fruits. Methods of preparation of jam, jelly, ready to serve, squash, nectar, canning, chuttney, pickle and marmalade etc. Packing technologies. Drying and dehydration of fruits. Visit to local processing unit

FRUIT SC 404 Experiential Learning in Nursery Production and Management 10(0+10)

Horticulture - 8th Semester

Project preparation, Nursery registration, methodology and certification, Establishment and management of plant propagating structures. Establishment of progeny blocks, identification of mother plants and maintenance of bud wood bank. Procurement of inputs (pots, polythene, FYM, etc.), Techniques and environ management for large scale production, Packaging and selling of plant material, Working out economics.

2.2 VEGETABLE SCIENCE

VEG 101 Temperate Vegetables 2(1+1)

Horticulture – 1st Semester

Importance of cool season vegetable crops in nutrition and national economy. Area, production, export potential, description of varieties and hybrids, origin, climate and soil, production technologies, seed production, post-harvest technology. Marketing of cabbage, cauliflower, knol-khol, sprouting broccoli, brussels' sprout, lettuce, palak, chinese cabbage, spinach, garlic, onion, leek, radish, carrot, turnip, beet root, peas, broad beans, rhubarb, asparagus, globe artichoke. Tuber crops – potato, sweet potato, tapioca, colocasia, yams.

Practical: Planning and layout of kitchen garden. Identification and description of varieties/hybrids; propagation methods, nursery management; preparation of field, sowing/transplanting; identification of physiological and nutritional disorders and their corrections; mulching, harvesting, post-harvest handling; cost of cultivation and field visits to commercial farms.

VEG 102 Tropical and Subtropical Vegetables 3(2+1)

Horticulture - 2nd Semester

Area, production, economic importance and export potential of tropical and sub-tropical vegetable crops. Description of varieties and hybrid, climate and soil requirements, seed rate, preparation of field, nursery practices; transplanting of vegetable crops and planting for directly sown/transplanted vegetable crops. Spacing, planting systems, water and weed management; nutrient management and deficiencies, use of chemicals and growth regulators. Cropping systems, harvest, yield and seed production. Economic of cultivation of tropical and sub-tropical vegetable crops; post-harvest handling and storage. Marketing of tomato, brinjal, chillies, okra, amaranthus, cluster beans, cowpea, lab-lab, snap bean, cucurbits, moringa, curry leaf, portulaca and basella,.

Practical: Identification and description of tropical and sub-tropical vegetable crops; nursery practices and transplanting, preparation of field and sowing/planting for direct sown and planted vegetable crops. Herbicide use in vegetable culture; top dressing of fertilizers and interculture; use of growth regulators; identification of nutrient deficiencies. Physiological disorder. Harvest indices and maturity standards, post-harvest handling and storage, marketing, seed extraction (cost of cultivation for tropical and sub-tropical vegetable crops), project preparation for commercial cultivation.

VEG 201 Production Technology of Vegetables and Flowers 3(2+1)

Agriculture - 3rd Semester

Importance of Olericulture, vegetable gardens, vegetable classification. Origin, area, production, varieties, package of practices for fruit vegetables – tomato, brinjal, chillies and okra; Cucurbitaceous vegetables cucumber, ridge gourd, ash gourd, snake gourd, bottle gourd, bitter

gourd and melons, Cole crops – cabbage, cauliflower and knol-khol. Bulb crops – onion and garlic. Beans and peas – French beans, cluster beans, dolichos beans, peas and cowpea. Tuber crops – potato, sweet potato, tapioca, colocasia, yams; Root crops – carrot, radish, turnip and beet root; Leafy vegetables – amaranthus, palak, gogu; Perennial vegetables – drumstick, coccinia and curry leaf. Importance of ornamental gardens. Planning of ornamental gardens. Types and styles of ornamental gardens. Use of trees, shrubs, climbers, palms, houseplants and seasonal flowers in the gardens. Package of practices for rose, jasmine, chrysanthemum, crossandra, marigold and tuberose.

Practical: Planning and layout of kitchen garden;Identification of important vegetable seeds and plants; Raising of vegetable nurseries; Identification of ornamental plants (trees, shrubs,climbers,house plants, palms etc.,) and development of garden features; Transplanting of vegetable seedlings in main field; Layout of lawns and maintenance; Seed extraction in tomato and brinjal; Depotting, repotting and maintenance of house plants; Visit to commercial vegetable farms; Training and pruning of rose (standards, hybrid 'T' roses scented roses) and chrysanthemum (pinching and disbudding); Planning and layout of gardens and garden designs for public and private areas; Intercultural operations in vegetable plots; Seed production in vegetable crops. Harvesting indices of different vegetable crops; Grading and packing of vegetables; Prolonging the shelf life of cut flowers.

VEG 301 Breeding of Vegetable, Tuber and Spice Crops 3(2+1)

Horticulture - 5th Semester

Centres of origin, plant bio-diversity and its conservation. Models of reproduction, pollination systems and genetics of important vegetable, tuber and spice crops. Self-incompatibility and male sterility, its classification and application in crop improvement. Principles of breeding self-pollinated crops, pure line selection, mass selection, heterosis breeding, hybridization, pedigree method, mass pedigree method, bulk method, modified bulk method, single seed descent method and back cross method. Polyploidy breeding. Mutation breeding. Principles of breeding cross pollinated crops, mass selection, recurrent selection, heterosis breeding, synthetics and composits. Application of biotechnology in crop improvement. Crops: Solanaceous vegetables, cole crops, cucurbits, bulb crops, root crops, leafy vegetables, okra, leguminous crops.

Practical: Floral biology and pollination mechanism in self and cross pollinated vegetables, tuber crops and spices. Layout, planning of experimental design (CRD and RBD). Working out phenotypic and genotypic heritability, genetic advance. Preparation and uses of chemical and physical mutagens. Polyploidy breeding and chromosomal studies. Techniques of F1 hybrid seed production. Maintenance of breeding records.

VEG 302 Seed Production of Vegetable, Tuber and Spice Crops 3(2+1)

Horticulture - 6th Semester

Introduction and history of seed industry in India. Definition of seed. Differences between grain and seed. Importance and scope of vegetable seed production in India. Principles of vegetable seed production. Role of temperature, humidity and light in vegetable seed production. Methods

of seed production of cole crops, root vegetables, solanaceous vegetables, cucurbits, leafy vegetables, bulb crops, leguminous vegetables and exotic vegetables. Seed germination and purity analysis. Field and seed standards. Seed drying and extraction. Seed legislation.

Practical: Study of seed structure, colour, size, shape and texture. Field inspection of seed crops. Practices in rouging. Harvesting and seed extraction. Germination, Seed Viability and purity analysis. Methods of seed production in cole crops, root vegetables, bulb crops, solanaceous vegetables, cucurbits, leafy vegetables, leguminous vegetables and exotic vegetables. Seed processing machines. Visit to seed production units.

VEG 401 Commercial Vegetable Production 3(1+2)

Agriculture - 7th Semester

Role of Soil, climatic and agronomic factors in vegetable production, Principles of cultivation including direct sowing, nursery management, transplanting, hardening of seedling and vegetable forcing, Weeds and their control. Rotation and Intercropping in vegetable crops. Export potentiality, Postharvest handling, processing, storage and marketing of vegetables.

Practical: Sowing and transplanting of vegetable crops. Effect of soil condition on seedling emergence and plant growth. Nutrient deficiency symptoms. Common weeds, their identification and control. Project formulation and evaluation for vegetable nursery production and vegetable forcing techniques.

VEG 402 Protected Cultivation of Horticultural Crops and Seed Production of Vegetables 4(1+3)

Agriculture - 7th Semester

Objective, importance and scope of protected cultivation. Nursery raising techniques. Environmental factors. Vegetable growing media. Irrigation and fertigation. Sustainable land use systems. Maximizing land use efficiency in protected structures. Problems of growing vegetables in protected structure,. Soil sterilization Techniques. Hydroponics cultivation. Pest management in green house/glass house. Crops and varieties suitable for protected cultivation. Specific technology for raising tomato, sweet pepper, cucumber and high value crops in off season. Cladding material for protected structures – use of mulches, Seed production of vegetables.

Practical: Study of various types of structures, methods to control temperature, CO_2 light, demonstration for sanitation, media, hydroponics, maintenance of parental lines and hybrid seed production in the glass house, Fertigation and nutrient management, control of diseases and insect pests in glasshouse. Visit to established greenhouses in the region.

2.3 POSTHARVEST TECHNOLOGY

PHT 301 Fundamentals of Food Technology 2(1+1)

Horticulture – 5th Semester; Agriculture - 6th Semester

Food and its function, food as source of nutrients, physico-chemical properties of foods, food preparation techniques, Nutrition: food, nutrition and health. Characteristics of well and malnourished population. Energy: definition, Respiratory quotient, Basal metabolic rate, Specific dynamic action, determination of energy requirements, food energy and total energy needs of the body. Carbohydrates: definition, classification, properties, functions, sources, requirements, digestion, absorption and utilization. Protein: amino acids, classification of amino acids, structure of proteins, properties, functions, sources, requirements, digestion, absorption, deficiency, quality of proteins, Protein Efficiency Ratio/ Net Protein Ratio/ Net Protein Utilization. Lipids: classification of lipids, functions, saturated and unsaturated fatty acids, properties of fatty acids, sources, requirements, digestion, absorption and utilization, rancidity of fats. Minerals: macro and micro-minerals (Ca, Fe and P), functions, requirements, sources, deficiency. Vitamins: classification (Fat soluble and water soluble), functions, sources, effects of deficiency, requirements of water soluble and fat-soluble vitamins. Balanced diet: recommended dietary allowances for various age groups, assessment of nutritional status of the population.

Practical: Methods of measuring food ingredients, effect of cooking on volume and weight, determination of percentage of edible portion. Browning reactions of fruits and vegetables. Microscopic examination of starches, Estimation of energy, Value proteins and fats of foods. Planning diet for various age groups.

PHT 302 Processing of Horticultural Crops 3(1+2)

Horticulture - 6th Semester

History of Food Preservation, Importance and scope of fruit and vegetable preservation industry in India, Food pipe line, Losses in post-harvest operations, Unit operations in food processing. Principle and methods of preservation: Asepsis, High temperature (Pasteurization and Sterilization), Low temperature, Chemicals, Drying, Filtration, Carbonation, Sugar, Fermentation, Salt, Acids, Antibiotics, Irradiation. Food colors, Food additives, Food flavors, Browning reactions. Methods of preparation of unfermented and fermented beverages: juices, squashes, ready-to-serve (RTS), syrups, ordials, sier, jam, jelly and marmalade, Preservation by sugar and chemicals, candies, crystallized fruits' preserves with chemicals preservatives, Preservations with salt, vinegar, oil, pickling, chutneys and sauces, tomato and mushrooms processing. Freezing of fruits and vegetables. Processing of plantation crops, products, spoilage in processed foods, quality control of processed products of Govt. policy on import and export of processed fruits, Food standards and labeling.

Practical: Identification of equipment and machinery used in processing and preservation of fruits and vegetables. Determination of physiological loss in weight (PLW), total soluble solids (TSS), total sugars, acidity and ascorbic acid content in fruits and vegetables. Canning of fruits and vegetables, Preparation of squash, RTS , Cordial, Syrup, Jam, Jelly, Marmalade, Candies, Preserves, Chutneys, Sauces, Pickles (Hot and Sweet). Visit to local processing units, local market, cold storage units and packing industry.

2.4 FLORICULTURE AND LANDSCAPING

FLORI 101 Principles of Landscape Gardening 1(0+1)

Horticulture - 1st Semester

Practical: Landscape gardening- definition, natural elements of landscape, factor affecting landscape design, art principles, elements of landscape design, plant material for landscaping- trees, shrubs, climbers, annuals, ferns, grasses, cacti and succulents, palms and cycads. Symbols, tools and implements used in landscape design; layout of formal gardens and informal gardens, special type of gardens - bog garden, sunken garden, terrace garden and rock garden. Landscape design for specific areas- educational institutes, religious places, railway stations, dam sites, colonies, farm houses, river banks, play grounds and avenue planting of roads.

FLORI 201 Introduction to Floriculture 3(2+1)

Horticulture - 3rd Semester

Scope and importance of commercial floriculture in India, Production technology of commercially important cut and loose flowers-rose, carnation, chrysanthemum, gerbera, gladiolus, lilium, tuberose, orchid, marigold, jasmine, dahlia and china aster for domestic and export market. Protected cultivation of cut flowers, post harvest technology of commercial cut flowers. Dry flower industry in India, different methods of flower drying, desiccants used for flower drying, qualities of desiccants, packaging and storage of dried ornamentals, pot pouries.

Practical: Identification of landscape trees, ornamental shrubs and climbers. Propagation of rose by T-budding, propagation of chrysanthemum by suckers and terminal cuttings. Preparation of nursery beds, sowing of seeds and raising of seedlings of annuals. Propagation by cutting, layering, budding and grafting. Training and pruning of roses. Harvesting, cleaning, curing, treating, packing and storage of gladiolus and tuberose bulbs. Use of chemicals and other compounds for prolonging the vase life of cut flowers. Drying of flowers. Flower arrangement practices.

FLORI 202 Ornamental Horticulture 3 (2+1)

Horticulture - 4th Semester

History, scope and aesthetic values of gardening. Famous gardens in India, Different styles of gardens- formal, informal and free style. Landscaping- definition and historical background; Floriculture industry: importance, area and production. Art principles, elements of landscape design, garden features, garden adornments. Significance of lawn, various species of lawn grasses, different methods for preparing lawn and lawn management practices; methods of designing rockery, water garden, etc. Various types of gardens trees, shrubs, climbers and herbaceous perennials, creepers, palms, ferns, grasses, cacti and succulents- their value in landscaping, growth habit, propagation method, planting time, flower colour and time. Flower arrangement, different types of flower arrangements, Ikebana, bouquets, button holes; Bio-aesthetic planning, its definition and significance, countryside planning, urban planning and planting avenues, educational institutes, religious places, railway stations, dam sites, colonies, farm houses, river banks and play grounds. Vertical and roof gardens. Bonsai, art of making bonsai, classification of bonsai;

Practical: Identification and description of annuals, trees, shrubs, climbers, palms, cycads, ferns, ornamental grasses, cacti and succulents. Identification and description of species/varieties of rose, chrysanthemum, marigold, gladiolus, carnation and their important inter-cultural practices. Planning and designing gardens, functional uses of plants in the landscape. Planning design of house garden, roadside planting, farm houses and industries. Preparation of land for lawn and planting of grass. Description and design of water garden, terrace garden and Japanese gardens. Flower ornaments. Visit to nearby gardens.

FLORI 301 Breeding and Seed Production of Ornamental Crops 3(2+1)

Horticulture - 6th Semester

History of improvement of ornamental plants, objectives and techniques in ornamental plant breeding. Introduction, selection, hybridization, mutation and biotechnological technique for improvement of ornamental plants. Breeding for disease resistance. Development of promising cultivars of important ornamentals. Role of heterosis and its exploitation, production of F1 hybrids and utilization of male sterility, production of open pollinated seed. Indian scenario in flower seed production, type of flowers seeds-F1, F2 and mixtures; Nucleus seed, breeder seed, registered seed and foundation seed. Harvesting, processing and storage of seeds. Seed certification.

Practical: Study of floral biology and pollination in important flower crops, Techniques of inducing polyploidy and mutation. Production of pure and hybrid seeds. Harvesting, conditioning and testing of seeds. Practices in seed production methods.

FLORI 401 Commercial Floriculture 3(1+2)

Agriculture - 7th Semester

Scope, importance and export potential of floriculture, environment factors influencing plant growth and flower production in cut flowers. Production technology including varieties, propagation, soil, nutrition, disease and pests of important cut flowers. Post harvest handling, grading and packing cut flowers, pot and bedding plants. Flower seed production. History of gardening, characteristics of Mughal, Japanese and English gardens. Principal groups of plants-trees, shrubs, climbers, shade loving plants, ground covers, their analysis and use in landscape composition. Principles of art and landscaping. Preparation of landscape plans for homes, farm complexes, small parks and institutions. Development and maintenance of rock, water and terrace gardens. Bonsai and dish gardens, project formulation and evaluation.

Practical:

Preparation of plans and laying out of gardens. Identification of planting material and commercial varieties of flowers. Seed collection, germination tests and storage. Harvesting and handling of cut flowers. Judging of flowers and pot plants. Visit to local nurseries and florist centers.

FLORI 402 Experiential Learning in Floriculture and Landscape Gardening 10(0+10)

Horticulture - 8th Semester

Preparation of project report, soil and water analysis, preparation of land and layout, Production and Management of commercial flowers, Harvesting and postharvest handling of produce, Marketing of produce, Cost analysis, Institutional management. Visit to flower growing areas and export house, attachment with private landscape agencies, Planning and designing, site analysis, selection and use of plant material for landscaping, formal and informal garden, features, styles. Principles and elements of landscaping. Preparation of landscape plans of home gardens, farm complexes, public parks, institutions, high ways, dams and avenues, Making of lawns, use of software in landscape. Making of bouquets, button hole, wreath, *veni* and *gazras*. Dry flower technology (identification of suitable species, important dessicants, drying techniques, packaging and storage).

2.5 BASIC SCIENCES AND HUMANITIES

(a) Biochemistry

BIOCHEM 301 Elementary Plant Biochemistry and Biotechnology 3(2+1)

Horticulture - 4st Semester; Agriculture - 6th Semesters

Carbohydrates: Occurrence classification and structure, physical and chemical properties of carbohydrates, isomerism, optical activity, reducing property, reaction with acids and alkalis, ozone formation. Lipids: Classification, important fatty acids and triglycerides, essential fatty acids. Physical and chemical control of oils, their rancidity, phospholipids, types and importance. Plant pigments – structure and function of chlorophyll and carotenoids, sterols, basic structure, role of brassinosteroides in plants. Proteins: Classification, function and solubility, amino acids – classification and structure, essential amino acids, properties of amino acids, colour reactions, amphoteric nature and isomerism; structure of proteins – primary, secondary tertiary and quaternary properties and reaction of proteins. Enzymes: Classification and mechanism of action; factors affecting enzyme action, co-factors and coenzymes. Vitamins and minerals as co-enzymes/co-factors. Carbohydrate metabolism – glycolysis and TCA-cycle; metabolism of lipids, fatty acid oxidation, biosynthesis of fatty acids, electron transport chain, bioenergetics of glucose and fatty acids, structure and function of nucleic acid replication, transcription and translation. History of biotechnology. Fundamental principles, micro-propagation and scope for commercialization. Application of micro-grafting in horticultural crops, meristem culture, anther culture, pollen culture, embryo culture, callus culture, cell culture, somoclonal variation, protoplast isolation, culture, fusion and applications. Cryopreservation .Genetic engineering. Future scope and present trends. Importance of biotechnology in horticulture.

Practical: Preparation of standard solutions and reagents. Carbohydrates – qualitative reaction, estimation of starch, reducing and non-reducing sugars; reaction of proteins, estimation of proteins by Lowery method. Estimation of free fatty acids; determination of iodine number of vegetable oils. Vitamins – estimation of ascorbic acid. Paper and thin layer chromatography. Sterilization techniques – composition and preparation of media – micropropagation of tomato. Callus culture, sub-culturing, induction of rooting-techniques in hardening.

(b) Microbiology

MICRO 101 Agricultural Microbiology 3(2+1)

Horticulture - 1st Semester; Agriculture - 2nd Semester

History and scope of microbiology: The discovery of microorganism, spontaneous generation conflict, germ theory of diseases, Role of microbes in fermentation, microbial effect on organic and inorganic microbial world. Microscopy and specimen preparation: The bright field microscope, fixation, dyes and simple staining, differential cells. Prokaryotic cell structure and functions. Types of growth curve. General properties of viruses and brief description of bactriophage – lytic and lysogenic cycle. Metabolsim in bacteria: ATP generation, chemoautotrophy, photoautotroph, respiration, fermentation. General principle of bacterial genetics: DNA as genetic material, genetically modified organisms. Soil Microbiology: Microbial groups in soil, microbial transformation of carbon, nitrogen, phosphorus and sulphur. Biological nitrogen fixation, Microflora of Rhizophere. Microbiology of water Microbiology of food: microbial spoilage and principle of food preservation.Beneficial microorganisms in agriculture: Biodegradation, Biogas production, Plant – Microbe interactions.

Practical: General instructions, Familiarization with instruments, material, glassware etc. Practice of aseptic methods: I- Evaluation of aseptic technique with Nutrient broth tubes. II- Evaluation of aseptic technique with Nutrient Agar plate. Methods of Sterilization and preparation of media: I- Preparation of Nutrient broth, nutrient agar plates, nutrient agar slant. II Sterilization of glassware by Dry heating, III Sterilization of nutrient broth by Filtration. Plating methods for Isolation and Purification of bacteria: I- Isolation of bacteria by streak plate method. II – Checking of purity of a bacterial culture by streak plating method. Identification of bacteria by staining methods and biochemical tests: I- Morphological examination of bacteria by simple and differential staining. II – Enumeration of bacteria by Pour plate method and spread plate method. Turbidometric estimation of microbial growth.

(c) Forestry

FOREST 301 Introductory Agroforestry 2(1+1)

Horticulture - 5th Semester

Agroforestry – definition, objectives and potential. Distinction between agroforestry and social forestry. Status of Indian forests and role in Indian farming systems. Agroforestry system, sub-system and practice: agri-silviculture, silvipastoral, horti-silviculture, hortisilvipastoral, shifting cultivation, taungya, home gardens, alley cropping, intercropping, wind breaks, shelterbelts and energy plantations. Planning for agroforestry – constraints, diagnosis and design methodology, selection of tree crop species for agro-forestry. Agroforestry projects – national, overseas, MPTS – their management practices, economics of cultivation – nursery and planting (*Acacia catechu, Dalbergia sissoo, Tectona, Populus, Morus, Grewia, Eucalyptus, Quercus* spp. and bamboo, tamarind, neem etc.).

Practical: Identification of seeds and seedlings of multipurpose tree species. Nursery practices for poplar, *Grewia optiva*, *Morus alba*, *Acacia catechu*, *Dalbergia sissoo and Tectona grandis*. Visit to agro-forestry fields to study the compatibility of MPTS with agricultural crops: silvipastoral, alley cropping, horti-silviculture, agro-silvipasture, fuel and fodder blocks. Visit to social forestry plantations – railway line plantations, canal plantations, roadside plantations, industrial plantations and shelterbelts. Rapid assessment of farmers needs for green manure, fodder, fuel wood in selected villages. Economics and marketing of products raised in agro-forestry systems.

FOREST 401 Production Technology of Economic Forest Trees 3(1+2)

Agriculture - 7thSemester

Plantation silviculture: native versus exotics; even-aged versus uneven-aged; monoculture versus mixed culture. Plantation technology and tending operations of economically important tree species. Agroforestry concept and suitable agroforestry systems/models for different regions. Economic and ecological aspects of agroforestry systems. Importance of superior phenotypes, their evaluation and use in plantations. Climate change and forests. Forest regeneration, productivity and rotation. Desertification and rehabilitation of waste lands. Short rotation intensive management of forest plantations. Trees outside forests, energy/industrial plantation and dendro-remediation. Production and marketing of forestry produce. Forest fire and its management. Wood based industries and importance of non-timber forest produce. Framework for forestry extension: participatory rural appraisal and joint forest management.

Practical: Nursery management: propagation methods, quality planting stock, preparation of nursery and plantation schedule. Layout and establishment of agroforestry models. Estimation of tree volume and biomass; enumeration and vegetation survey. Methods of vegetation analysis: measurement of biomass and productivity. Visit to commercial plantations, wood based industries and forestry institutes.

(d) Agrometreology

AGROMET 101 Principles of Agricultural Meteoreology 3(2+1)

Agriculture - 1st Semester

Meaning and scope of Agronomy: National and International Agricultural Research Institutes in India, Agro-climatic zones of India and Uttar Pradesh. Tillage, crops stand establishment, planting geometry and its effect on growth and yield, cropping systems, harvesting. Agricultural meteorology: Weather and climate, micro-climate, weather elements, Earths' atmosphere, composition and structure, solar radiation, nature, properties, depletion, solar constant and energy balance; Atmospheric temperature, factors affecting horizontal and vertical distribution, variations and global warming. Air Pressure variations; Wind: factors affecting, cyclones and anticyclones and general circulation; Atmospheric humidity, vapour pressure and saturation, Process of condensation, formation of dew, fog, mist, snow, rain and hail; Formation and classification of clouds; Introduction to monsoon, Basics of weather forecasting.

Practical: Study of tillage implements; Practice of ploughing; Practice of puddling; Study of seeding equipments and introduction of remote sensing. Different methods of sowing; Study of manures, fertilizers and green manure crops / seeds (including calculations); Study of inter-cultivation implements and practice; Practice of methods of fertilizer applications; Participation in ongoing field operations; Site selection for Agromet observatory; Measurement of temperature; Measurement of rainfall; Measurement of evaporation (atmospheric/soil); Measurement of atmospheric pressure; Measurement of sunshine duration and solar radiation; Measurement of wind direction and speed and relative humidity; Study of weather forecasting and synoptic charts.

(e) Environmental Science

ENV 301 Environmental Science 2(1+1)

Agriculture & Horticulture - 6th Semester

Environment: introduction, definition and importance. Components of environment - interactions with organisms. Global and Indian environment - past and present status. Environmental pollution and pollutants. Air, water, food, soil, noise pollution - sources, causes and types. Smog, acid rain, global warming, ozone hole, eutrophication, sewage and hazardous waste management. Impact of different pollutions on humans, organisms and environment. Introduction to biological magnification of toxins. Deforestation - forms and causes, relation to environment. Prevention and control of pollution - technological and sociological measures and solutions - Indian and global efforts. India, international and voluntary agencies for environmental conservation - mandates and activities. International conferences, conventions and summits - major achievements. Environmental policy and legislation in India. Introduction to environmental impact assessment. Causes of environmental degradation - socio-economic factors. Human population growth and lifestyle.

Practical: Visit to local areas - river/forest/grassland/catchment etc. to document components of ecosystem. Study of common plants, insects, birds and animals. Visit to industries to study pollution abatement techniques.

Elective Courses

Rural Horticulture Work Experience (RHWE) 20(0+20)

Horticulture - 7th Semester

Students shall be attached to the nearby villages in the 7th semester in which farmers are involved in production of horticultural crops for commercial purpose. Students first will collect the information about adopted practices in horticultural crops and shall suggest to farmers to adopt improved practices for cultivation and will also suggest value addition of their produce on small scale. At the end of training, students shall prepare a report of practices being adopted by the farmers, suggested as well as adopted improved practices and profit earned by them will be

calculated before and after adopting improved practices and will compute the enhanced income after adopting improved practices and shall submit this report to the Incharge, RHWE.

RHWE 401 Project Formulation, Economics, Banking, Financial &Institutional Management 4(0+4)

Horticulture - 7th Semester

Design and project formulation, calculation of economics of the project assigned, Banking procedure to finance horticultural industry establishment, study of existing schemes by the government for the promotional of horticulture (NHM), types of finance, management of horticultural produce processing industry.

RHWE 402 Registration, Certification, Quality Control and Assurance 3(0+3)

Horticulture - 7th Semester

Procedure of registration and certification of commercial nursery of horticultural crops with State Government Horticultural Department, seed testing, seed quality standards of plant propagules, seed quality laboratory exercises for determining quality of plant propagules, seed act and seed rules, seed law enforcement agencies .

RHWE 403 Procurement of Raw Materials, Packaging, Sale Promotion, Marketing, Postharvest Management and Linkage with other Institutions 4(0+4)

Horticulture - 7th Semester

Procurement of raw materials of fruits and vegetables for processing, maintenance of record of procured material (inventory preparation) in the processing plant, packing (bottleing, corking, sealing, labeling, aseptic packing), storage of packaged vegetable and fruit products, sales generation and promotional activities for enhancing consumers demand of processed vegetables and fruit products, marketing of fruit and vegetable products, marketing structure, marketing organization, post harvest management of fruits and vegetables in processing plants, management of waste material, quality control of fruits and vegetables during processing in processing plant, FPO and HACCP, institutes working on different aspects of post harvest technology and coordination among them for technology refinement.

RHWE 404 Cultural/Commercial Management Techniques of Plant Nursery, Postharvest Management Units, High Value Horticultural Crops including Flowers, Medicinal and Aromatic Plants 4(0+4)

Horticulture - 7th Semester

Practical knowledge of land preparation, soil treatment, cultural management including soil/media, sowing/ growing of short duration high value horticultural crops (flowers, medicinal and aromatic plants), fertigation and irrigation management, integrated pest management, harvesting and post harvesting management, certification and distribution, cost of production, requirement, establishment and management of post harvest processing units, methods of extraction/processing of product(s) from important high value flower crops, medicinal and aromatic plants. Visit to commercial polyhouses, institutes working on medicinal and aromatic

plants. Cost of production of high value horticultural crops (flowers, medicinal and aromatic plants).

RHWE 405 Research Station /KVK/KGK/ICAR Institutions' Activities and attachment to Horti-based Institution 3(0+3)

Horticulture - 7th Semester

To impart practical knowledge of activities being carried out by ICAR system, SAU's, the students shall be divided in the different groups and shall be attached to the different Research Station /KVK/KGK of the University or other agricultural universities/ICAR Institutions for the period of 12 weeks/as per feasibility. In the above said institutions, during the attachment time, the students shall also be attached to the horticultural based institutions of the area to get practical knowledge of the various aspects of institute activities on horticultural crops.

RHWE 406 Introduction to Agrometerology 2(0+2)

Horticulture - 7th Semester

Agro meteorological observatory. Measurement of temperature, rainfall, Evaporation, atmospheric pressure, sunshine duration, solar radiation, wind direction, wind speed and relative humidity. Study of weather forecasting and synoptic charts. Processing, presentation and interpretation of climatic data in relation to crops Introduction to GIS and GPS. Application of Remote Sensing Techniques – in horticultural crops

Experiential Learning (Duration 20 Weeks) 20(0+20)

Horticulture - 8th Semester

In the experiential learning, following two areas have to be undertake by all the students of B.Sc. (Hons.) Horticulture degree programme to undergo specialized training.

FRUIT SC 404 Nursery Production and Management 10(0+10)

Horticulture - 8th Semester

Project preparation, Nursery registration, methodology and certification, Establishment and management of plant propagating structures, Establishment of progeny blocks, identification of mother plants and maintenance of bud wood bank, Procurement of inputs (pots, polythene, FYM etc.), Techniques and environment management for large scale production, Packaging and selling of plant material, Working out economics.

FLORI 402 Floriculture and Landscape Gardening 10(0+10)

Horticulture - 8th Semester

Preparation of project report, site and need analysis, preparation of land and layout, Production and Management of commercial flower crops, Harvesting and post harvest handling of produce, Marketing of produce, Cost Analysis, Institutional Management. Visit to Flower growing areas and Export House, Attachment with private landscape agencies. Planning and designing, site

analysis, selection and use of plant material for landscaping, Formal and informal garden, features, styles, principles and elements of landscaping, Preparation of landscape plans of home gardens, farm complexes, public parks, institutions, high ways, dams and industries, Making of lawns, use of software in landscape, Making of bouquets, button hole, wreath, veni and gazaras, car and marriage palaces, Dry flower Technology (identification of suitable species, drying, packaging and forwarding techniques).

Hostel Rules

(Approved by Academic Council vide Agenda No. 02/06 in its 2nd meeting held on 22nd February 2014)

The University hostels are for the accommodation of regular students on the roll of constituted colleges of the University. The regulations for the appointment and responsibility of Hostel Warden and Assistant Hostel Warden, Hostel Dues, Procedure for obtaining Hostel Accommodation, Guidelines for Hostel Allotment, Constitution of Committees in the Hostel, Rules for Hostel Inmates, Mess Rules and Breach of Discipline and Punishment(s) there of are described below.

1. Hostel Warden and Assistant Hostel Warden

1.1 Appointment

1.1.1 At present, only one Hostel is being used and few more Hostels are under construction. Therefore, the responsibilities of one Assistant Hostel Warden (AHW) will be given to one of the Assistant Professors working in the University to maintain the discipline and for the smooth running of Hostel.

1.1.2 AHW will be provided with a rent-free accommodation inside the Hostel without charging for electricity and water supply. However, use of Room Heater, Blower, AC, etc. will not be permitted.

1.1.3 An amount of Rs. 150/- per month will be paid by the University Administration to Assistant Hostel Warden for his/her official use of mobile phone.

1.1.4 These rules and regulations for the appointment of Hostel Wardens and Assistant Hostel Wardens will be revised from time to time as per requirements.

1.2 <u>Responsibilities of Assistant Hostel Warden:</u>

1.2.1 At present, AHW will have all responsibilities and powers described for the Hostel Warden. AHW will report directly to DSW/ADSW, who in turn will report to Registrar of the University.

1.2.2 AHW shall be the main University Official to look after the allotment of furniture and accommodation to deserving/eligible students and take necessary actions in maintaining a complete inventory and will update the same.

1.2.3 AHW shall be responsible for controlling the overall activities of the students with regards to maintain discipline in the Hostels. He/she will give personal attention to the inmates' problems and render all necessary and possible help with a view to maintain discipline and order amongst the inmates.

1.2.4 He/she shall be responsible for the administration of all affairs of the Hostel service including food management, recreation and other cultural and extra curricular activities, the hostel/mess maintenance, its surrounding and get the needful done from the various university services agencies and hostel/mess staff.

1.2.5 AHW shall be available in the Hostel office for at least one fixed hour every day to be notified in advance.

1.2.6 He/she shall supervise the maintenance of proper accounts of the hostel Mess by the Mess Contractor, and record of hostel activities and its inmates.

1.2.7 He/she should have overall control on Hostel staff, servants and students.

1.2.8 AHW shall maintain an up-to-date Register of all inmates of his hostel in his office in which he shall enter Name, ID Number, College, Room No., permanent address with telephone/mobile number, person to be contacted in case of emergency and Blood group of each inmate of the hostel. He shall furnish a wing-wise list of inmates residing in the hostel by the first day of the following month.

1.2.9 In each hostel, AHW shall maintain an **Inspection Register** in which the Deans/Director and other Officers of the University visiting the hostel shall record their comments with regard to working of the Hostel and Mess. A copy of the inspection notes shall be forwarded to the Hostel Warden, Dean Student Welfare and other concerned Officer of the University also along with the details of the follow up actions taken by the warden.

1.2.10 In each hostel, AHW shall maintain a **Late Comers Register.** The inmates coming late in the night i.e., after the attendance time shall be required to enter their names along with the reasons for returning late before allowing his entry to the hostel. This register shall be seen by the AHW next morning for taking necessary action including penalty as per rules.

1.2.11 **Leave of absence:** All applications for leave of absence submitted by Hostel inmates for more than 8 hours at night from the hostel shall be approved by the AHW. Then he/she shall inform about the orders passed on such applications of any inmates of the Hostel to the Warden/ADSW.

1.2.12 In each hostel, AHW shall maintain a **Visitors Register**. All visitors to the Hostel (permissible as per rules) shall enter their names, full address, purpose of visit along with date and time of entry and departure. The register shall be checked and signed by AHW daily to ensure that only bonafide persons visit the hostel.

1.2.13 In each Hostel, AHW will maintain a register for physical facilities. The Director Works and Plant or concerned Officers and his staff shall be responsible For recording defects pertaining to civil works, electrical fitting,

furniture repair and water supply separately. The inmate shall record the defects notified by them in these registers, AHW will ensure that repair and replacement are done within three days and also record the actions taken by against each complaint recorded in the register. Light and fans should be maintained within few hours.

1.2.14 AHW will display the list of contact numbers and address of the persons such as Medical Officer, ADSW, DSW, Registrar, etc. so that in case of emergency, they could be contacted by Hostel inmates.

2. Hostel Dues

2.1 The Hostel dues described in the Information Bulletin of UPCATET-2012 and in the Proceeding of the meeting held on 16.07.2012 will implemented in MSKJUAT, Banda. These dues are to be paid by each student seeking Hostel accommodation in MSKJUAT, Banda. The details are given below:

Charges:	**Rate in Rupees**
Hostel admission fee	Rs. 1000/-
Hostel and Mess Security	Rs. 10000/- (Refundable)
Hostel Room rent per semester:	
Hostel and Mess Security	Rs. 4000/-
Double occupancy Room	Rs. 3000/-
Triple occupancy Room	Rs. 2250/-
Electricity Charges (per semester)	Rs. 1000/-
Generator maintenance charges (per semester)	Rs. 500/-*

* At present generator facility is not available in Hostel and therefore, generator charges will not be taken from Hostel Inmates.

2.2 The Hostel accommodation will be allowed to those only that student who has deposited the Hostel and Mess security.

2.3 Hostel security is refundable to the student when he/she vacates the Hostel after clearing the dues.

2.4 Immediately after the allotment of the Hostel accommodation, a student shall have to deposit all dues such as Hostel fees, food charges of Mess/Cafeteria as the case may be, electricity and water charges and other kind of fee or charge shall be paid by each inmate punctually. Otherwise his/her allotment will be cancelled and given to next eligible student.

2.5 Generator facility will be provided and maintained by the University. However, students shall be responsible for its running cost, for running the

generator in a Hostel will be decided by the Utility Service Committee elected by the Hostel Residents.

2.6 The University shall pay electricity bill of a Hostel utilizing the funds paid by the residents as mentioned above. However, if the cumulative bill for a semester exceeds, then additional expenses (over and above the total amount deposited by residents of a Hostel plus 10% covering common facilities) shall be equally borne by the residents of a Hostel.

2.7 These charges could be revised by the University Administration from time to time.

3. Procedure for obtaining Hostel Accommodation

Format of Application by the students for obtaining Hostel Accommodation is given below:

Manyawar Shri Kanshiram Ji Unuiversity of Agriculture and Technology, Banda
Application for Hostel Accommodation

Name of bonafide student (in full) : .....
Student ID. No. : .....
Father's Name : .....
Category (GEN, OBC, SC/ST) : .....
Degree Programme : .....
College : .....
Tel./Mobile No. : .....
Permanent Address : .....
.....

Paste Self-Attested Recent Photograph

Latest OCPA of Academic Session : ....Semester.....
State if under Academic Probation and/or Conduct Probation: .....
Details of Hostel and Mess charges already paid (Please attach photocopies of all receipts)

- Hostel admission fee — Rs. 1000/- — Receipt No. ..... & date.....
- Hostel and Mess Security — Rs. 10000/- — Receipt No. .....& date.....

- Hostel Room rent per semester:
  - Single occupancy Room — Rs. 4000/-
  - Double occupancy Room — Rs. 3000/-
  - Triple occupancy Room — Rs. 2250/-

  } Receipt No. .....& date.....

- Electricity Charges (per semester) — Rs. 1000/- — Receipt No. .....& date.....
- Generator maintenance charges — Rs. 500/- — Receipt No. .....& date.....

I have read the Hostel Rules and undertake to abide them. Kindly allot me accommodation in the University Hostel.

Date: **Signature of Applicant**

For office use

(Class Protector) **(Advisor)** **(Head)**

(Dean/Registrar) **(Finance Comptroller)**

In case of Double/Triple occupancy, the details of other roommates are as under:

Name of Student	**Class**	**ID. No.**
1.....	….....	……..
2.	.....	……..

Allotted Accommodation in Hostel No. .....Room No. ..…..

Signature & Date

(AHW/Other authorized University Officer)

4. Guidelines for Hostel allotment

4.1 All bonafide students of the University are eligible to apply for Hostel accommodation. However, priority will be given to the senior students and outstation students based on latest available merit.

4.2 The students whose parent/guardian are residing in Banda city and surrounding area within 8 km shall not ordinarily be eligible for Hostel accommodation. However, if accommodation is available, they may be considered for allotment on merit.

4.3 In-service postgraduate students, who are claiming house rent allowance, shall not be eligible for Hostel accommodation.

4.4 During allotment as per merit, a student opting for double/triple occupancy room shall be given option to choose his/her room-mates belonging to same class. Students of different classes shall not ordinarily be permitted to stay as room-mates in double/triple occupancy rooms. However, this rule shall not apply to real brothers, or real sisters.

4.5 Each resident will be provided a study chair, a study table, an almirah/cupboard, and a bed/takhat by the University.

4.6 The students shall not be entitled to retain Hostel accommodation beyond the normal duration of their degree programmes.

4.7 The University shall not supply any electric bulb or tube light to the inmates of the Hostel. Inmates shall bring their own tubes or bulbs for lighting their rooms, as and when necessary. Light arrangements for common places shall be maintained by the Assistant Hostel Warden or as decided by the University Administration**.**

4.8 The students who are unable to get Hostel accommodation may make their own arrangements.

5. Constitution of Committees in the Hostels

5.1 Utility Service Committee: This committee of three members shall be elected by Hostel inmates. It shall review from time to time, the measures to be taken to ensure proper working of Common Room for recreational activities, indoor games and other cultural activities.

5.1.1 The Committee shall supervise and ensure the proper use of the Common Room by inmates and to control the removal, misuse or damage of any furniture, newspaper's or other materials placed there in.

5.1.2 The Committee shall supervise and ensure that inmates visit Common Room and places outside their rooms in proper dress.

5.1.3 Utility Service Committee will decide time for running the generator in a Hostel, arrange diesel for it and will maintain proper record.

5.2 Mess Secretaries: Two or more Mess Secretaries (preferably one from each floor/class) shall be elected unanimously by inmates to serve for a period of one semester. In case of non unanimity, inmates may elect a Mess Secretary for each floor through votes in the presence of AHW. Each Mess Secretary shall perform following responsibilities.

5.2.1 He/she will be responsible for smooth running of the Hostel mess.

5.2.2 He/she will take salary records of the workers.

5.2.3 The stock of food supply (rice, dal, vegetable, oil etc.) will be stored in a store room whose key will be kept by him/her. He/she will maintain the monthly records of food commodities in and out of the store room.

5.2.4 He/she would maintain discipline, and peaceful environment on his/her floor of the Hostel.

5.2.5 He/she will maintain a register with proper details and signature of the students availing food per month.

5.2.6 He/she will make arrangement for continuous supply of gas cylinders by refilling cylinders etc.

5.2.7 He/she will upkeep and maintain all necessary orders, amendments in Rules and regulations from time to time laid by the University.

5.2.8 He/she will be responsible for the security of utensils and related items provided to the Mess Contractor.

5.2.9 He/she will look over the hygiene/ sanitation/cleanliness of the Mess as well as quality/quantity of prepared food items (Veg/Non Veg).

5.2.10 He/she will ensure the purchase of food items of high quality from the market.

5.2.11 He/she will ensure that trained and skilled workers are engaged for cooking in the Hostel Mess.

5.2.12 He/she will ensure that food is served timely and will sign on all bill vouchers of food items (Perishable and non perishable), labour salary, diesel for generator, etc.

5.3 Hostel Wing Prefects: There shall be a Student Prefect for each wing/floor of the Hostel. The student Prefects shall be appointed from amongst the senior students with a grade point average of 7.500 or higher. Each Wing Prefect shall perform following responsibilities:

5.3.1 To report serious cases of illness of inmates in his wing to the AHW.

5.3.2 To help the AHW in taking attendance of inmates in the night.

5.3.3 To encourage the participation of the inmates of the Hostel in extracurricular activities.

5.3.4 To generally help the AHW in administration and in maintenance of a healthy atmosphere in Hostel.

5.3.5 To ensure proper maintenance of furniture and other utility services in the hostel wing.

5.3.6 To promptly bring to the notice of the AHW about any breach of Rules and Regulations in the Hostel.

5.3.7 To ensure cleanness in his/her Hostel wing.

6. Rules for Hostel Inmates

6.1 Allotment of Hostel rooms to the students will be entirely on the discretion of the Warden. The Warden may change the allotment as and when he/she thinks necessary to do so. Any change by the students from one room to another or the partnership shall not be allowed except under special circumstances with the prior written approval of the Warden.

6.2 After a student is admitted in the University, it is compulsory for him/her to reside in the Hostel maintained or recognized by the University except those living either with their parents or guardians within or outside University Campus. Written permission must be obtained by such students who do not want to reside in the Hostel from the DSW/Dean or any other authorized officer.

6.3 The Dean/DSW/Warden of the Hostel reserves the right to refuse admission in the Hostel without assigning any reason to a student whose living in the Hostel is considered prejudicial to the general discipline in the Hostels.

6.4 The student who has been provided Hostel accommodation must stay in the allotted room. Violation of this rule shall result in punishment to the actual allotted student as well as to the other student residing in his/her place.

6.5 All the rooms in the Hostel shall be opened for inspection, which may be done by the Warden or any other competent or deputed official of the University for the purpose at any time.

6.6 The Hostel residents shall vacate the rooms before they leave for summer break or whenever asked to do so by DSW or any other competent authority. All the Hostel articles issued to the residents should be returned to the Hostel Warden/ Supervisor/Clerk before vacating the room. The resident shall be responsible for any loss of his personal costly belongings. The residents may deposit their luggage/belongings in the Hostel Cloak Room/Store.

6.7 When required by the Warden for specific reasons, the student residents shall vacate the room temporarily or otherwise. In case of refusal, the Warden shall have power to break the lock, open the room and get the room vacated.

6.8 The students must be present in their rooms at the time of roll call, which will be taken every night between 9.00 and 10.00 pm by the Prefect who will be appointed by the Warden. Any student found absent without permission is liable to a fine up to Rs. 30/- per night of absence and/or disciplinary action. The cashier would realize the fine as fees on the directions of the Warden. Parents/Guardians of the students or the respective State Governments, as the case may be, will be informed. If unauthorized absence of a Boarder exceeded 15 days, the allotment of the room will be cancelled and Hostel room rent will be forfeited.

6.9 While visiting the Dining Hall, Common Room and Canteen, the residents should be properly dressed.

6.10 When the Warden finds a student frequently absent during night without permission, he will, apart from imposing the usual fines, issue a warning to that student. If the warning has no effect on the students, Dean/DSW on the recommendation of the Warden may expel the student from the Hostel or may take such other disciplinary action as he deems proper.

6.11 The Hostel Warden shall exercise the powers of general supervision and control over the Hostel affairs. In granting Character Certificate to a Boarder, the opinion of the Hostel Warden will be given due weightage.

6.12 All cases of illness should be reported to the Hostel Warden/University Medical Officer.

6.13 In each wing/floor of the Hostel, a senior student of good standing may be appointed as a Prefect, who will assist the Hostel Warden/Assistant Warden in the administration of the Hostel.

6.14 The resident must see the Hostel Notice Board twice a day as important notices are displayed on the Notice Board.

6.15 No student shall quarrel or misbehave with any fellow student or employee of the Hostel including Dhobi, Barber, Chowkidar, Sweeper, Servant, maintenance staff, etc. Any misbehavior on the part of the employees or fellow students shall be brought to the notice of the Warden and the concerned student is liable to disciplinary action.

6.16 No Boarder should see the DSW for ordinary affairs. He/she should contact Hostel Warden/Assistant Warden for such purposes.

6.17 For organizing any meeting in the Hostel, the residents should seek the approval of the DSW through the Hostel Warden concerned at least one week in advance.

6.18 Each Boarder shall pay the prescribed charges for the utensils, crockery and breakage fund for the Academic Year. This amount shall be collected along with other fees.

6.19 If a student defaces or causes damage to the building, furniture or fitting, the cost of repair or replacement shall be recovered from him/her.

6.20 Each Boarder shall pay the prescribed charges per Semester as the Common Room Fund. This amount shall be collected along with other fees.

6.21 The residents shall make proper use of Common Room, Newspapers, allied literature and the other articles required for indoor games. Timings of the Common Room shall be fixed by the Hostel Warden from time to time. The Common Room Secretary and Joint Secretary shall be responsible for running the Common Room. Any amendment to Common Room Rules can be made by the committee consisting of the Hostel Warden, Secretary and Joint Secretary of Common Room subject to approval by the DSW.

6.22 Students must be personally present at the time of allotment of rooms. The room to be allotted will be specified immediately before the allotment is made.

6.23 Friends and relatives of the students may visit them in the Hostels during the daytime only. Unauthorized person is not allowed to stay at night in the Hostel after 8 pm. If, however, parents/guardians or other guests of the students have to stay, the students must take permission from DSW on the recommendation of the Warden. This facility will be available in Students' Guest House for a maximum period of three days only on payment basis.

6.24 No guests of opposite sex are allowed to stay or visit the students in the Hostel at any time under any circumstances.

6.25 Students shall not shift fittings, furniture, etc. assigned to the rooms. When leaving for vacation, these must be handed over to the storekeeper or any other authorized representative. During the period of allotment of room, the student will be responsible for all property in the room.

6.26 No resident student shall keep in his possession or use intoxicating drugs including gutka, tobacco, cigarette, etc. or liquor of any kind. Gambling in any form in the Hostel is strictly prohibited. Similarly, no fire combustible articles, arms or lethal weapons are allowed to be kept in the Hostel.

6.27 No resident student should keep and use radio, transistor, tape recorder/player, T.V., etc. in their rooms.

6.28 Resident students should observe cleanliness around their surroundings and should keep their rooms neat and tidy.

6.29 The duty of Chowkidar is to watch and ward the University property. No student, in any circumstances, should ask the Chowkidar to do any other work.

6.30 Students shall have to take care of their belongings themselves and are advised not to keep any costly items with them in the Hostel.

6.31 No electric point should be left at "ON" position while going out or locking the room at any time.

6.32 Students are not permitted to keep and use electrical gadgets such as electric heaters, iron press, kettles, etc. in their rooms.

6.33 Cooking in any form is not allowed in the Hostel room.

6.34 Students found guilty of ragging shall be expelled from Hostel.

6.35 The inmates of the hostel shall use the lavatories, bathrooms, wash-basins, urinals etc., properly and cause no damage to the various fixtures. In case of such acts, the concerned inmates could be fined & asked to pay for the loss/damage of the University property.

6.36 No inmates of the hostel shall leave the Hostel during the night after the time notified by Assistant Hostel Warden (AHW) or University Administration except with the written permission of the Hostel Warden/Dean Student Welfare (DSW) in an emergency.

6.37 All students residing in a Hostel shall take their meals from their Hostel Mess during specified timings. Mess Manager and any servant shall not be responsible for catering students before or after the notified timings.

7. Mess rules

7.1 Appointment of Mess Contractor

The Inmate of the University Hostel will have the option to organize a Mess for their food either on Contractual or on Cooperative basis.

7.2 Contractual Mess

The appointment of Contractor(s) for running contractual Mess for the Hostels shall be done by the University Administration through Tender/Advertisement in newspapers or any other appropriate procedure.

7.2.1 For Girls Hostel, preference shall be given to female contractors employing female workers.

7.2.2 The interested candidates will submit their applications along with the Menu Chart and Rates.

7.2.3 University reserves the right to decide the rates of breakfast, lunch and dinner per plate after the discussion made between Contractor and University Administration.

7.2.4 Mess charges will be paid by each Hostel Inmate as per approved rates of each meal (breakfast, lunch and dinner) taken by him/her. However, each resident shall be required to pay minimum Mess charges for forty meals (lunch and/or dinner).

7.2.5 In case meals are taken by guests of the Hostel Inmates, they would be charged additional Rs. 15 for each meal/diet.

7.3 Cooperative Mess

To hire a Labour Contractor for Cooperative Mess, a Mess Committee shall be constituted unanimously by the Hostel Inmates in the presence of the Hostel Warden/Assistant Hostel warden. This Committee shall arrange Labour Contractor for their Cooperative Mess.

7.3.1 The Mess Committee/Contractor shall maintain a Stock Register of the monthly purchases (day, date with details) of food items.

7.3.2 A joint bank account in the name of Assistant Dean Student Welfare and Assistant Hostel Warden will be opened for the transactions of money and all the transaction regarding to cooperative Mess and the account will be operated jointly by them.

7.3.3 All Hostel Inmates will deposit Rs. 1700/- in the beginning of the month to the Mess Committee. Mess Committee will divide total expenses equally on each student in the last day of the month. If total food expenses for each Inmate for the month are less than Rs. 1700/- , then the remaining balance will be adjusted in the expenses for next month. If the total expenses exceed from Rs 1700/- then he/she will deposit the exceeded amount along with the expenses for the next month.

7.3.4 Food Menu will be finalized in the general meeting of Hostel Inmates, which will be acceptable to all. If the Food Menu is not acceptable to all Inmates, then Food Menu will be finalised in a meeting of Hostel Inmates chaired by Assistant Hostel Warden. However, Food Menu could be revised from time to time if required.

7.3.5 Food material for one month will be purchased by the Mess Committee and details of purchased food materials shall be posted on Hostel Notice Board for the information of all Hostel Inmates.

7.3.6 Any Hostel Inmate can accompany the Mess Committee for the purchase of food material from market. Mess Committee will prepare monthly expenditure of purchased materials and show to AHW and ADSW as well as post on the Hostel Notice Board.

7.4 Common Rules for Contractors of Contractual and Cooperative Mess

7.4.1 The Mess Contractor will be required to deposit a security of Rs. 50000/- for each Hostel at the time of accepting the Mess contract. This amount will be refunded at the termination of his/her contract upon the submission of “No Dues Certificate” to DSW or any other authorized Officer.

7.4.2 Mess Contractor will have to execute a Contract Bond with the Competent Authority of the University on a non-judicial stamp paper of Rs. 100/-.

7.4.3 The Contract Bond will be not transferable to any person in any condition.

7.4.4 University Administration reserves the right to terminate the contract by giving one month notice. Contract may also be terminated if services provided by the Contractor are not satisfactory or Contractor is not interested to operate the Mess.

7.4.5 Mess Contractor will not pay any kind of rent for Mess Buliding.

7.4.6 The accommodation facility will not be provided by University Administration for hired workers.

7.4.7 Hon'ble Vice Chancellor has reserve the right to revise any terms and condition mentioned above.

7.4.8 In case of any dispute, decision of the Hon'ble Vice Chancellor will be considered as final.

7.4.9 In case of any legal dispute, jurisdiction area will be Band only.

7.5 Responsibility of Mess Contractor

7.5.1 To provide fresh and hygienic food of high quality to Hostel inmates as per prescribed norms and menu. Mess Committee will check the quality of the food time to time.

7.5.2 To insure that all the hired workers for the Mess are healthy, neat, tidy and mannered and will submit the list of hired workers to the Hostel Warden. Any unknown/strange person cannot enter the Hostel Mess without permission of Hostel Warden in any condition and Mess Labour Contractor will be responsible in case of breach the rules.

7.5.3 To be responsible for any type of injury, accident, health Insurance of his hired labourers or any type of damage of utensils due the careless of handling by the workers.

7.5.4 Contractor will provide uniform and name badge to all of his/her hired labourers and will insure that they are dressed in the prescribed uniform with their names displayed on it. Mess Contractor will ensure that all the workers should be disciplined and follow security rules of the University. In no case, they will be considered as University Employee and will never made any claim for any compensation. The Hired worker will never constitute any type of group and participate in any organization on the University Campus.

7.5.5 To ensure that child workers are not hired for the Mess. If it happens, Mess Contractor will be responsible.

7.5.6 University Administration will provide dining table, dining chair, ceiling fan, tube light, cooking and serving utensils and Mess

Contractor will take care of these given items and will return as such at the end of his Contract.

7.5.7 To be responsible for cleanliness of all utensils, furniture, dining hall, etc. after each meal and same will be inspected by Mess Secretary and Hostel Warden time to time and he will be directed accordingly.

7.5.8 To take care of R.O., Refrigerator and Water Cooler as per the instructions given by the authorized authority.

7.5.9 To ensure sanitation inside as well as in the surrounding of the Mess and will dispose of waste materials and rubbish at appropriate place.

7.5.10 To ensure the cooking of the food by using LPG by making his own arrangement and he will not use charcoal or wood for cooking in any circumstances in order to avoid pollution.

7.5.11 To maintain a Register for the residents and the number of meals taken by them per month and getting the same verified by Mess Secretary regularly.

7.5.12 To open Hostel Mess by taking key from Security Guard/Hostel Warden in the morning at 6:00 am daily and closing the same in the night at 10:00 pm. Thereafter he/she will hand over key to Security Guard/Hostel Warden. In case of any changes in opening and closing time, prior approval will be required by the competent authority.

7.5.13 To serve the food in the Hostel Room if any Inmate is sick or injured after getting permission from Hostel Warden.

7.5.14 To be responsible for the payment of electricity bills for all the electrical equipments related to Mess. To accomplish this, University will provide a separate sub meter for the power supply in the Mess.

8. Breach of Discipline and Punishment(s) there of

Acts of indiscipline and punishments there of are given in the Regulation No. 3.3.16 of Academic Regulations and the same will be applicable to the Hostel inmates.

RULES FOR LIBRARY

(Approved by Academic Council vide Agenda No. 02/09.1 in its 2nd meeting held on 22nd February 2014)

These rules are intended to regulate the use of University Library resources and will be reviewed from time to time to meet the changing needs.

1. **Library Incharge**
   He/she will exercise control on the University Library under guidance and instructions of Hon'ble Vice-Chancellor.
2. **Library Hours**

Working Days	9:30 A.M. to 5:00 P.M.

NOTE:- Timings are subject to change from time to time in accordance with the orders of the university Librarian.

3. **Membership and Library Use**

3.1 Teachers, Students, Research Scientists, Extension Workers, Office and other staff members of University can become members of Library by submitting duly filled a prescribed application form (given below) through proper channel and agreeing to abide by rules and regulations of Library of MSKJ University of Agriculture and Technology, Banda. Library membership will be renewed annually with the commencement of Academic Session.

3.2 Pensioners of the University and Wards of the University employees may also use the Library resources with permission of appropriate authority on payment of refundable Security Fee.

3.3. Other persons such as Guest and Contractual Teachers of the University working in the University and special members on the recommendations of the officers of the University/Heads of Departments, subject to the approval of the University Librarian/Vice-Chancellor may also use the Library resources on payment of the following charges:

S.No.	Members	Refundable Security Fee (Rs.)
(i)	Guest and Contractual Teachers of the University	Rs. 2000/-
(ii)	Retired Teachers and Scientists of the University	Rs. 2000/-
(iii)	Special Members	Rs. 3000/- + Annual membership fee of Rs.1000/-

3.4 Library membership card issued to members is strictly non-transferable and is to be renewed every year. A lost Library membership card if found should be immediately deposited in the Library. Failure to comply or its misuse can lead to cancellation of membership, if a duplicate card has been issued.

MANYAWAR SHRI KANSHIRAM JI UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BANDA
APPLICAITON FORM FOR LIBRARY MEMBERSSHIP

Name (In full) :

Student ID. No. :

Father's Name :

Degree Programme :

University Employee-Designation :

Department/College/Office :

Tel./Mobile :

Address

(a) Local :.....

(b) Permanent :.....

I wish to become as a member of University Library. Kindly permit me to be enrolled as a member. I have read Library Rules and undertake to follow them.

Date:

_____
Signature of applicant

Forwarded to Library Incharge for enrolment as Library Member

_____	_____	_____
Class Proctor	**Advisor**	**Controlling Officer**

For office use

Allowed as per Library Rules.

_____
Signature of Authorized Official

4. Access to Books

The readers have free access to books and periodicals which are on the open shelves. Text books, rare books, thesis and dissertations can be consulted only in the assigned area as per directions of the Librarian. Bonafide members will have free access to the CD-ROM Data bases installed in the Computer Section of the Library.

5. Library Service

Members are free to seek the assistance of Library staff in selecting reading material, checking of references, searching of misplaced reading materials, compilations of bibliographies, procurement of documents, etc. Members are free to recommend new books or Journals for the library and to suggest improvement in Library services. Suggestions and recommendations, duly signed can be put in the suggestion box placed on the circulation counter.

6. Admission to the Library

Before entering the Library, the Library User should sign a register kept at the Library gate and leave his/her personal belongings such as printed material, Radio, Tape Recorder, Bags, Handbags, Rain coat, Umbrella, etc. with the Attendant at the entrance of Library, mobile phones in silent mode.

7. Issuing and Return of Library Documents/Books

Normal issue/return of Library reading material is suspended one hour before closing except overnight issue. The books borrowed for overnight must be returned within an hour of the opening of the Library on the next day. Reading material can be temporarily loaned to the departments if they are needed for consultation by the members of the departments.

The Librarian can recall any Library reading material at any time if necessity arises. A valid member of the Library may borrow books for a limited period specified in the following Tables. If the due date for return of the book falls on holiday, the next working day will be considered as due date to deposit the borrowed book(s).

8. Entitlement for borrowing books from the Library

Users	**Text books**	**Total No. of Books, Manuals etc.**
Undergraduate students	1	2
Postgraduate students	1	3
Teaching staff	2	4
Non-teaching staff	-	1
Research fellow(Jr./Sr.)	1	2
Special Members	-	2

* Textbooks are to be issued overnight only.

Duration of issuing books and other materials from the Library

General Books	14 days
Reference Books, Abstracts and indexes	For overnight only
Current Periodicals	Not to be issued
Bound periodicals & serials to be issued to postgraduate students, teachers and officers of the university	Overnight only
Thesis, rare books and micro-form reading materials	Not to be issued

Notes:-

1. Books will be issued subject to their availability in the Library.
2. Few books will be reserved for use in the Library premises.
3. Duration of issuing books could vary depending upon the availability of books and requirements of other teachers pending with the Library incharge.

9. Overdue Charges

The following overdue charges are recovered for library material retained longer than period of loan from all borrowers:

9.1 General Books: Rs. 1/- per day
9.2 Overnight text books and bound Periodicals: Rs. 1/- per hour
9.3 Overnight Text Books: Rs. 1/- per hour per book.
9.4 Overnight Bound Periodicals: Rs. 1/- per volume per hour.

NOTE:- Fine can be reduced or remitted on reasonable grounds by the university Librarian or any official authorized by him on his behalf.

10. Loss of Library Membership Card, Books, Documents and other Materials

Following charges are recovered from the borrowers for the loss of any Library material.

10.1 Books

10.1.1 *General Books:* The Library Member, who has lost a book/document, should have to replace each lost book/document by a new copy of same or latest edition. Replacement should be completed within a month from the due date of deposition of the book in the Library. If the misplaced book is traced, it should be immediately deposited along with fine as per rules. The fine, however, may be remitted or reduced if the Librarian feels that the loss of book was due to reasons beyond control of the borrower.

In case the lost book is out of print, the charges will be as under:

(i) Current price of the book plus Rs. 50/- as processing charges.

(ii) If current price of the book is not available; then the original price of book plus 10% increase in price per year from the date of its procurement subject to the maximum of double of its original price.

(iii) In case the lost book is received free of cost and price is not given in any of the catalogue available in the Library, Hon'ble Vice-Chancellor is authorized to fix reasonable price on the recommendation of Library Incharge.

10.1.2 *Text Books, Rare and Reference Books:* Rs.150/- over and above the current price. The cost of the complete set may have to be paid for the loss of a single volume if it is not available separately.

10.2 Periodicals

10.2.1 *Single issue of periodicals:* Replacement within three months or the cost of the volume if the single issue is not available.

10.2.1 *Bound Volume of a Periodical:* Replacement of the volume or four time the cost of the volume.

10.3 Loss of Library Membership card

Loss or misplacement of membership card should be reported immediately to Circulation Desk/ Incharge of the University Library. However, the Library Member shall be still responsible for the books issued on his/her Library Membership Card. Duplicate Library Membership Card will be issued on payment of Rs. 100 /- on the recommendation of the Controlling Officer after one month from the date of report of loss to the issuing authority. Then the old/lost card will stand cancelled.

10.4 Loss of Property Counter Token

Rs. 10/- will be charged for the loss of token of property counter.

11. Photocopying Service

Photocopying services are available to the reader of the library through a private agency on the charges per exposure approved by the competent authority from time to time. Photocopy machine available in the library on payment basis.

12. General Rules

12.1 Library users are not allowed to take along them the personal books, printed reading material, etc. inside the Library premises/Reading Hall. Similarly other personal belongings such Radio, Tape recorder, Bags, Hand bags, Rain coat and Umbrella etc. are strictly prohibited inside the Library and these should be deposited at proper counter. They are advised not to leave cell phones, purse, money, credit card and other valuables in the hand bag outside the Library as University will not be responsible for their loss.

12.2 All members are required to bring their Library Membership Card and produce it whenever asked for identification.

12.3 Borrowing and returning of the books, payment of fine or charges, application for membership cards, etc. must be done through Circulation Desk between 10 am to 5 pm on working days.

12.4 Library Membership may be withdrawn/cancelled if a member is found taking books out of Library without proper authorization, disfiguring and mutilating books in any way.

12.5 Books shall be recalled and their issuing will be suspended during the period of stock checking/verification.

12.6 No reading material should be issued to a borrower if he/she is drawing books for outsiders.

12.7 Any kind of edibles is not allowed inside the Library. Smoking/chewing of tobacco and other kind of intoxicants is strictly prohibited inside the Library premises.

12.8 Use of phone of any kind or playing music inside the Library is prohibited. Mobile phones should be switched off or kept in silent mode in the Library.

12.9 Any change of address and designation, phone/mobile No., etc. of Library Member should be reported immediately to Library Incharge.

12.10 Library users should maintain strict pin drop silence inside the Library premises.

12.11 The Library users must make sincere efforts to keep the Library clean.

12.12 Chairs and tables and other Library materials, fittings, furniture etc. should not be marked, defaced or disarranged.

12.13 Absence/leave from the University will not be considered as an excuse for the delay in the return of the books.

12.14 Under special circumstances, the Library Incharge may refuse to issue the books, and recall the books already issued to any member without assigning any reason thereof.

12.15 The new books, periodicals, received in the Library will be displayed for a week/ fortnight only or till there is space vacant at the 'New Periodicals Desk'. As soon as new/current periodicals are received, old periodicals will be removed and placed in other racks meant for the purpose.

12.16 Members are welcome to recommend new books or journals or other documents for the Library and to suggest improvement in Library services. Suggestions and recommendations, duly signed may be submitted to Library Incharge.

12.17 Reference books, news papers, magazines and journals should not be taken out of the Library.

12.18 The Library may accept donation of manuscripts, books, periodicals etc. from the donors. Such donations once accepted will become the sole property of the University. In lieu of donation, the acknowledgement will be made to the donors.

12.19 On transfer, retirement or while leaving the University job, the Library Member must return all the Library books borrowed by him/her and clear all Library dues to obtain 'No Dues Certificate' from Library Incharge.

12.20 He/She must produce his/her identity card at the security counter and has to enter the name in the register.

12.21 Library card have to be returned at the time of No dues.

12.22 Reserve books will be issued for overnight only.

12.23 Books shall not be reissued to the same borrower if some other user requested for the same book.

12.24 Borrowers must satisfy about the physical condition of the books before borrowing otherwise they will be held responsible for damage of the book.

12.25 Visitors found talking loudly, shouting or quarreling with other visitors or staff or indulging in eve teasing or any other act of indiscipline shall be liable to punishment as per university rules.

12.26 Damage to Library property may lead to withdrawal of library facilities and disciplinary action will be taken.

12.27 Any member who is found guilty of taking book out of the library without authorization shall be liable for punishment by librarian.

12.28 University librarian is competent to impose any or more of the following penalties, if any student is found guilty of any act of indiscipline like- warning, fine, temporary or permanent withdrawal from library facilities and banning entry to the library.

Rules for Educational Tours

(Approved by Academic Council vide Agenda No. 02/09.2 in its 2nd meeting held on 22nd February 2014)

As per Course Curriculum recommended by 4th Deans' Committee of ICAR (which has been adopted in University), Educational Tours are compulsory for the students of B.Sc. (Hons) Agriculture and B.Sc. (Hons) Horticulture. The students will be awarded scores for Educational Tours.

1. Ordinarily, the Educational Tours will be arranged in semester break/term break. However, in exceptional cases, tour can be undertaken outside the breaks with the permission of the Hon'ble Vice Chancellor.

2. Students of the UG and PG classes shall be sent on tour after the completion of 6th semester.

3. The places to be visited will be decided by the Coordinator Teaching/Dean of the College concerned.

4. Rail concession for the students will be arranged by the University Administration and the concessional rail fare will be borne by the University. But for the place which not connected by rail, the University will meet 100 km of the bus fare and the balance shall be borne by the students.

5. The use of the University motor vehicles, in exceptional circumstances can also be allowed by the Hon'ble Vice Chancellor on the recommendation of the Coordinator Teaching/Dean of the college concerned. In such cases, the running charges of the vehicles will be borne by the University.

6. The Tour fee will be charged from the students (which will be determined separately for each tour), and it will not be refunded under any circumstances.

7. Two teachers and two attendants will be allowed to accompany students on each Educational Tour.

8. The students, who want to go on educational tour, have to give in writing the responsibility of their own, which will be also signed by their parents/guardian. In case of any mis-happening during the tour, the University Administration will not be responsible in any way.

9. These rules could be modified/updated as per requirement from time to time.

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