ANNAMALAI UNIVERSITY

(Accredited with 'A' Grade by NAAC)

FACULTY OF AGRICULTURE

(Accredited by ICAR)

DEPARTMENT OF AGRICULTURAL ECONOMICS

Academic Regulations and Syllabi

MASTER OF BUSINESS ADMINISTRATION(AGRI BUSINESS)

(Semesters 1- 4)

Under Choice based credit system (CBCS) with Outcome based Education

2018-2019 Onwards

ANNAMALAI UNIVERSITY
FACULTY OF AGRICULTURE
ACADEMIC REGULATIONS
GECO 21 M.B.A. (Agri Business)
(With effect from 2018-19)

1. Short title and commencement

1.1. These rules and regulations shall govern the post graduate studies leading to the award of degree of Master of Business Administration (Agri Business) in the Faculty of Agriculture.

1.2 They shall come into force with effect from the academic year 2018 – 2019.

2. Definitions

2.1 An "Academic Year" shall consist of two semesters.

2.2 "Semester" means an academic term consisting of 110 working days including final theory examinations.

2.3 "Subject" means a unit of instruction to be covered in a semester having specific No., title and credits.

2.4 "Credit hour" means, one hour lecture plus two hours of library or home work or two and half hours of laboratory/field practical per week in a semester.

2.5 "Grade Point of a subject" means the value obtained by dividing the percentage of marks earned in a subject by 10 and the Grade Point is expressed on a 10 point scale.

2.6 "Credit Point" means the grade point multiplied by credit hours.

2.7 "Grade Point Average" (GPA) means the quotient of the total credit points obtained by a student in various subjects at the end of each semester, divided by the total credit hours taken by the student in that semester. The grading is done on a 10 point scale and the GPA has to be corrected to two decimals.

2.8 "Overall Grade Point Average" (OGPA) means the quotient of cumulative credit points obtained by a student in all the subjects taken from the beginning of the first semester of the year divided by the total credit hours of all the subjects which he/she had completed up to the end of a specified semester and determines the overall performance of a student in all subjects during the period covering more than one semester. The OGPA has to be arrived at the second decimal place.

3. Eligibility for admission

Candidates for admission to the M.B.A. (Agri Business) programme should satisfy the following requirements.

3.1. Candidates seeking admission to the M.B.A. (Agri Business) Degree programme should have completed any one of the following four year degree programmes from Universities recognized by Annamalai University.

B.Sc. (Hons.) Agriculture / B.Sc. (Hons.) Horticulture / B.Sc. (Ag.) / B.Sc. (Hort.) / B.Sc. (Agri. Mark and Co-op.) / B. Tech. (Hort.) / B. Tech. (Ag. Engg.) / B. Tech. (Agri. Biotech.) / B.Sc. (Forestry) / B.F.Sc. / B.Sc. (Sericulture) / B.Sc. (Home Science) / B.E. (Ag.) / B.V.Sc / B.Sc (Dairy Science) any other degree offered by Agriculture/ Veterinary/Fisheries Universities.

3.2. Candidates who have undergone the programme under conventional system should possess not less than a second class Bachelor's degree. The candidates under 4 point grade systems should possess a minimum OGPA of 2.5 out of 4.00 and 2.75 out of 4.00 in the subject concerned. In the 10 point system, a minimum OGPA of 6.00 out of 10.00 and 6.50 out of 10.00 in the subject concerned is required. However, this will not apply to SC/ST candidates for whom a pass in the degree concerned is sufficient.

3.3. An entrance test will be held separately for each Degree programme. Candidates shall be required to be present on the specified date and time for written test and interview at their own expenses.

4.1. Duration of the programme

The duration for the M.B.A. (Agri Business) programme will be of two years with four semesters. A student registered for Full- time M.B.A. (Agri Business) programme should complete the course within four years from the date of his/her admission.

4.2 Credit and GPA requirements

A student enrolled for the M.B.A. (Agri Business) programme to earn eligibility for the degree is required to complete 55 credits as detailed below.

i) Core subjects	**21**
ii) Electives	**8**
iii) Supporting subjects	**5**
iv) Seminar	**1**
vi) Project work	**12**
vi) In-plant training	**6**
vii) Study tour	**2**
Total credits	**55**

The core subjects are mandatory for a student. These subjects should be offered by the Department of Agricultural Economics.

4.3 Non- credit Compulsory courses

Subject code	Course title	Departments offer the subjects	Credit
PGS 611	Research data analysis	Agricultural economics	0+1
PGS 612	Technical writing and communication skills	English	0+1
PGS 623	Basic analytical techniques	Agricultural economics	0+1
PGS 624	Library and information services	Library science	0+1
PGS 715 e-course	Intellectual property and its management in agriculture	Agrl. Economics	1+0
PGS 716 e-course	Disaster management	Agronomy	1+0
	Value Added Course (two courses)		6+0
		Total Credits	8+4=12

4.4. Minimum Grade point requirement

A M.B.A. (Agri Business) student should maintain a minimum Grade Point of 6.00 out of 10 to secure a pass in a subject. In the subjects in whom a student fails, he/she has to reappear for the examination to get a pass in that subject. Overall Grade Point Average (OGPA) of 6.50 out of 10 is required to secure a degree.

5. Attendance requirement

5.1. One hundred per cent attendance is expected of each student. A student, who fails to secure a minimum of 80 per cent of attendance in each subject separately for theory and practical, shall not be permitted to appear for the final examination in that subject and will be required to repeat the subject when ever offered.

In case of new admission, who are permitted to join late due to administrative reasons, the attendance will be calculated from the date of joining of the student. However, for genuine reasons, condonation of attendance deficiency may be considered by the Vice-Chancellor on the recommendation of the Head of the Department and The Dean, Faculty of Agriculture on payment of condonation fee prescribed by the University.

5.2 Students absenting from the classes with prior permission of the Head of the Department/Dean, Faculty of Agriculture on official University business shall be given due consideration in computing attendance.

6. Advisory Committee

6.1. Each M.B.A. (Agri Business) student shall have an Advisory Committee to guide him/her in carrying out the research programme. The Advisory Committee shall comprise a Major Adviser (Chairman) and two members. Of the two members, one will be from the same Department and the other in the related field from the other Departments of Faculty of Agriculture. The Advisory Committee shall be constituted within three weeks from the date of commencement of the first semester.

6.2. Major Adviser (Chairman)

Every student shall have a Major Adviser who will be from his/her major field of studies. The appointment of Major Advisers (Chairman) shall be made by the Head of the Department concerned. The chairman in consultation with the Head of the Department will nominate the other two members. In the event of the Major Adviser being away on other duty/leave for a period of more than three months, the member of the Advisory Committee from the same Department will officiate as the Major Adviser.

6.3. Guidelines on the duties of the Advisory Committee

i. **Guiding students in drawing the outline of project work**
ii. **Guidance throughout the programme of study of the students.**
iii. **Evaluation of project and seminar credits.**
iv. **Correction and finalization of project draft.**
v. **Conduct of qualifying and final Viva-Voce examination.**
vi. **The proceedings of the Advisory Committee will be sent to the Head of the Department concerned within 10 working days.**
vii. **Periodical review of the Advisory Committee proceedings will be made by the Head of the Department concerned.**

7. Programme of Study

7.1 The student's plan for the M.B.A. (Agri Business) work, drawn up by the Advisory Committee, shall be finalized before the end of the first semester.

7.2 The programme shall be planned by the Advisory Committee taking into account his/her previous academic training and interest.

7.3 Programme of project work

The outline of project work of the student, in the prescribed manner and as approved by the Advisory Committee, shall be forwarded by the Chairman to the Head of the Department concerned by the end of the third semester.

8. Evaluation of Students' Performance

8.1. Mid-semester examination (MSE)

8.1.1. Every teacher handling a subject shall conduct Mid-Semester Examination (MSE) as per the scheme drawn by the Head of the Department concerned /PG coordinator, and evaluate. The answer scripts will be shown to the student after valuation, and returned to the course teacher. The Head of the Department will be responsible to ensure the distribution of answer papers to the students. The marks

obtained by the students should be sent to the Controller of Examinations through the Head of the Department concerned within fifteen working days.

8.1.2. Writing the mid-semester examination is a pre-requisite for writing the final theory and practical examinations. If a student does not appear for MSE, he/she is not eligible to appear for the final examinations. Such candidate has to reappear for the MSE as and when the respective examinations are conducted only after getting permission from the Dean, Faculty of Agriculture on payment of fee prescribed by the University.

8.1.3 The MSE marks will not be shown separately in the grade sheet but will be combined with the respective final theory and practical marks. MSE marks awarded in a course will be added to the supplementary examinations also.

8.1.4 The MSE marks will be furnished to the Head of the Department within 10 days after the conduct of MSE. If the student is not satisfied with the award of the marks, he/she shall appeal to the Dean, through Head of the Department within three working days after the announcement of marks. The appeal will be considered and the results reviewed by a Cell consisting of the Dean and the Head of the Department concern. The decision of the Review Cell shall be final. If the Head of the Department himself is the course teacher, one senior member of the department concern shall be nominated by the Dean.

8.1.5 The MSE will be of one hour duration

8.1.6 If the student is not able to write the MSE due to deputation by the University, he/she may be permitted to take up missing MSE. Such examination should be completed ordinarily within 15 working days after the respective MSE.

8.1.7 A student who fails to attend a mid-semester examination due to unavoidable circumstances shall be permitted with prior approval of the Dean to take up missing examination of the particular course, on payment of fee prescribed by the University. Such tests should be completed ordinarily within 15 working days after the respective MSE.

The distribution of marks will be as indicated below.

Test	Subjects with Practical	Subjects without Practical	Subjects without Theory
Mid-Semester	20	30	30
Final theory	40	70	-
Final practical	40	-	70
Total	100	100	100

The question paper model and distribution of marks for Mid Semester examinations are as follows.

Mid-Semester Examinations

For Subjects with practicals (20 marks)

1. Objective Type	**10 out of 12**	**(10 X 0.5)**	**5 Marks**
2. Definitions/Concepts	**5 out of 7**	**(5 X 1)**	**5 Marks**
3. Short Notes	**2 out of 3**	**(2 X 2 ½)**	**5 Marks**
4. Essay Type	**1 out of 2**	**(1 X 5)**	**5 Marks**

For Subjects without practicals (30 marks)

1. Objective Type	**10 out of 12**	**(10 X 0.5)**	**5 Marks**
2. Definitions/Concepts	**5 out of 7**	**(5 X 1)**	**5 Marks**
3. Short Notes	**4 out of 5**	**(4 X 2 ½)**	**10 Marks**
4. Essay Type	**2 out of 3**	**(2 X 5)**	**10 Marks**

8.2. Final examinations

8.2.1. The final theory and practical examinations will be of three hours duration each conducted separately by the University.

8.2.2. Theory examinations will be conducted before practical examinations.

8.2.3. The final theory and practical examinations will be evaluated by two examiners (one will be the course teacher and the other will be one among the senior faculty suggested by the head in consultation with the The Dean, Faculty of Agriculture)

8.2.4. The question papers for the final theory examinations will be set by the person selected from the approved panel of question paper setters.

The question paper model and distribution of marks for final theory examinations are as follows:

Final Theory Examinations

For subjects with practical (40 marks)

1. Definitions	**5 out of 7**	**(5x1)**	**5 marks**
2. Short notes	**5 out of 7**	**(5x2)**	**3 marks**
3. Essay type	**either or type** (one question from each unit)	**(5x5)**	**25 marks**

For subjects without practical (70 marks)

1. Definitions	**5 OUT OF 7**	**(5X2)**	**10 marks**
2. Short Notes	**5 OUT OF 7**	**(5X4)**	**20 marks**
3. Essay Type	**either or type** (one question from each unit)	**(5X8)**	**40 marks**

8.2.5. Practical Examination

Practical examinations will be conducted separately towards the end of each semester. Proper maintenance and regular submission of practical records are required. Those who do not bring with them the certified practical records/assignments will not be allowed to appear for the practical examination. The marks awarded for assignments shall be noted in the record, at the time of first appearance and will be taken into account for subsequent appearances.

The distribution of marks for final practical examination for courses with theory and practical and only practical is as follows

S.No.	Particulars	Courses with theory and practical	Courses with only practical
1	Practical part	25	55
2	Assignment/specimen collection	5	5
3	Record	5	5
4	*Viva voce*	5	5
	Total	40	70

8.3. Grading

i. **The student should secure 60 per cent marks separately in theory and practical and 65 per cent marks in aggregate to secure a pass in the subject. Students who secure marks below 65 per cent in a subject will be treated as Reappearence (RA).**

ii. **Each subject shall carry a maximum of 100 marks for purpose of grading. The grading shall be done as grade point, i.e., the percentage of marks earned in a subject is divided by ten. The grade point is expressed on a 10 point scale up to two decimals.**

iii. **The reappearance examinations for the candidates who fail in a subject or subjects will be held in the subsequent semester.**

iv. **Students who did not fulfill the required minimum attendance of 80 per cent will be awarded 'E' grade and has to repeat the subject.**

8.4. Class ranking

In calculation of class equivalent for OGPA the following classification shall be adopted.

OGPA		Class
9.00 and above	-	Distinction
8.00 to 8.99	-	I Class
7.00 to 7.99	-	II Class
6.50 to 6.99		Pass

8.5. Non- Credit Compulsory Subjects

For Non–Credit Compulsory subjects the evaluation processes will be as that of the regular subjects, however, the marks obtained will not be taken into account to calculate the OGPA.

9. Credit Seminar

Seminar is compulsory for all the students and each student should present a seminar of 0+1 credit in the third semester.

9.1 The seminar topic should be only from the major field and should not be related to the area of project work.

The seminar topics are to be assigned to the students by the Chairman of the Advisory Committee in consultation with the Head of the Department concerned within 2 weeks after the commencement of the semester.

9.2. Under the guidance and supervision of the Chairman of the Advisory Committee, the student will prepare the seminar paper after reviewing all the available literature and present the seminar 2 weeks after completion of Mid-Semester Examination in the presence of the Head of the Department, Advisory Committee, staff members and PG students.

9.3. The circular on the seminars by the post-graduate students shall be sent to other Departments to enable those interested to attend the same.

9.4. The Chairman will monitor the progress of the preparation of the seminar paper and correct the manuscript containing not less than 25 typed/printed pages with a minimum number of 50 references, covering the recent 10 years time. The student will submit two copies of the corrected manuscript to the Head of the Department concerned through the Chairman before presentation.

The student will incorporate suggestions and carry out corrections made during the presentation and resubmit three fair copies to the Head of the Department concerned through the Chairman (one copy each to Dept. Library, Chairman and the student) within 10 days after presentation.

9.5 The performance of the student has to be evaluated for 100 marks and Grade Point awarded by the Head of the Department concerned along with Advisory Committee. The Grade Point may be given based on the following norms.

Coverage of Literature	**40**
Presentation	**30**
Use of Audio–Visual Aids	**10**
Capacity to Participate in the discussion and answer the Questions	**20**
Total	**100**

10. Term paper / Special assignment

This has to be assigned to the student by the teacher in subject with theory and practical. Term papers should cover a wide range of topics within the subject limits. The topic should be different from that of the credit seminar. Term papers / special assignments will be evaluated during practical examination.

11. Qualifying Examination

Only those students who successfully completed the qualifying examination will be admitted to candidacy of the degree. The qualifying examination consists of written and oral examination.

11.1. Minimum requirement for Qualifying Examination

The students who have passed major courses will be permitted to appear for the qualifying examination. The qualifying examination will be conducted during III semester after mid semester examination and before the end of the III semester.

11.2. Selection of Examiner

A panel of five external examiners for qualifying examinations shall be given by the HOD at the end of III semester within 15 days of the start of III semester to the Controller of Examinations, who will nominate as per need from the panel of the examiner.

11.3. Written Examination

The written examination consists of one paper covering major subjects only. The Controller of Examination will conduct the examination by getting the question paper from external. The external examiner will evaluate the answer papers during his visit to conduct the viva-voce examination.

The question paper for the written examination will be of 3 hours duration and each question (Essay type) need not be restricted to any particular topic in a course but it should be comprehensive. The written examination will be conducted at the same time in all discipline.

Qualifying marks for passing the written examination will be 60.

11.4. Qualifying viva-voce Examination

The advisory committee shall conduct the qualifying viva-voce examination with the external member, who shall be a specialist in the subject from outside the university

11.5. The Heads of departments will monitor and coordinate the conduct of the qualifying viva. The performance of the candidate will be Graded as Satisfactory / Unsatisfactory.

11.6. Communication of Results of Qualifying Examination

The chairman of the advisory committee shall act as chairman for the examination committee and shall be responsible for communicating the results of the examination to the Controller of Examination through HOD in the prescribed format.

11.7. Failure /Absence in Qualifying Examination

When a student fails or absents for the qualifying examination, he/she may apply for permission to appear for re-examination to the Controller of Examination with the recommendation of the chairman of the advisory committee and Head of the Department. A student, who apply for re-examination should attend written examination and viva-voce. Re-examination shall not take place earlier than three months after the first examination and it will be conducted by the advisory committee as previously indicated. If a student fails in the re-examination, further re-examination will be considered on the recommendation of the Advisory Committee, HOD and Dean, Faculty of Agriculture.

If the students fail in the qualifying examination, the project credits registered in the final semester should not be evaluated unless he / she successfully completes the qualifying examination.

11.8 Absence of advisory committee member during qualifying/final viva-voce examination:

1. **Conducting qualifying and final viva voce examination in the absence of advisory committee members is not allowed.**
2. **Under extra-ordinary circumstances if the qualifying/final viva-voce examination to postgraduate student has to be conducted in the absence of one or two advisory committee members, permission to conduct the examination by co-opting another member in such contingencies should be obtained from the Dean in advance through the Head of the Department. The Chairman of the advisory committee in consultation with the concerned member and Head of the Department will co-opt another member.**
3. **The co-opted member should be from the same department of the member who is not attending the examinations.**
4. **In the absence of the Chairman of advisory committee, respective Heads of Departments should act as Co-chairman with prior permission of Dean.**

12. Project Work

12.1. The topic of project to be carried out by the student will be assigned by the Chairman of the Advisory Committee in consultation with the Head of the Department concerned. After assigning the topic, each student may be instructed to submit a detailed programme of work to be carried out by him/her during the semester in the prescribed proforma. After scrutiny and approval, a copy of the programme may be given to the student for carrying out the work during the

semester in the prescribed proforma. The evaluation of project work done by the student should be based on the approved programme.

12.2. The distribution of project credits will be as follows:

III Semester	**0+ 4**
IV Semester	**0+ 8**
Total	**0+12**

13. Evaluation of Project

13.1. Attendance register must be maintained in the department by HOD/chairman for all the students to monitor whether the student has 80% of attendance in research.

13.2. The student has to submit his/her project observation note book to the major Adviser. The major Adviser will scrutinize the progress and sign the note book with remarks as frequently as possible. This note book will form the basis for evaluation of project progress.

13.3. After completion of 80% attendance for project and on or before the last day of the semester, the advisory committee should evaluate the progress of project work as per the approved programme and monitoring register and award SATISFACTORY OR UNSATISFACTORY depending upon quantity and quality of work done by the student during the semester.

13.4. The procedure of evaluating project credits under different situations are explained hereunder.

Situation - I

The students has completed the project credits as per the approved program and awarded 'SATISFACTORY' by the advisory committee. Under the said situation the student can be permitted to register fresh credits in the subsequent semester. If the student is awarded 'UNSATISFACTORY' he/she has to register afresh the same block of the project credits in the subsequent semester.

Situation - II

The student who does not satisfy the required 80 per cent attendance shall be awarded grade 'E'.

Situation - III

The student who could not complete the project work as per the approved programme of work for reasons beyond his/her control such as any other impeding/unfavourable situation for satisfying the advisory committee.

Under the situations (II&III) grade 'E' should be awarded The student has to reregister the same block of project credits for which 'E' grade was awarded in the following semester. The student should not be allowed to register for fresh (first time) project credits.

In the mark sheet, it should be mentioned that 'E' grade was awarded due to lack of attendance or want for favourable conditions.

Situation - IV

The student who fails to complete the project work after repeating the registration for the second time the student will be awarded 'not satisfactory' and in the the mark sheet the 'second time' should be mentioned.

For the registration of project credits for the third time permission has to be obtained from the Dean of the Faculty and permission for further registration for the fourth time has to be obtained from the University.

Re-registration of further project credits shall be decided by the University based on the recommendation of the Advisory Committee, Head of the Department concerned and the Dean, Faculty of Agriculture.

Situation - V

If a student could not complete qualifying examination till the end of the final semester/grace period 'E' grade should be awarded for the final block of the project credits registered in the final semester. He has to re-register the same block of project credits in the next semester and attend the qualifying examination when conducted by the controller of examination.

14. Submission of Project

14.1. The project for his/her Master's degree should be of such a nature as to indicate a student's potentialities for conduct of independent project. The project shall be on topic falling within the field of the major subject and shall be the result of the student's own work. A certificate to this effect duly endorsed by the Major Adviser (Chairman) shall accompany the project.

14.2 The project credits registered in the last semester of post graduate programmes should be evaluated only at the time of the submission of project, by the advisory committee. Students can submit the project at the end of the final semester. If a post graduate student has completed the project before the closure of the final semester, the chairman can convene the advisory committee meeting and take decision on the submission of project provided the student satisfies 80 per cent attendance requirement. Two copies of the project should be submitted in paper pack for evaluation to the HOD.

15. Grace period

15.1 Students can avail a grace period up to a month for submission of project report after the closure of final semester by paying necessary fine as prescribed by the University. If a student is not able to submit the thesis within a month grace period, the student has to re-register the credits in the forth coming semester. The student (s) who re-register the credits after availing the grace period will not be permitted to avail grace period.

15.2 **Based on the recommendation of advisory committee and the Head of the Department, the Dean, can sanction the grace period. A copy of the permission letter along with the receipt for payment of fine as prescribed by the University should accompany the thesis while submission.**

16. Submission of project after re-registration

The minimum of 80 per cent attendance requirement for submitting the project after, re-registration need not be insisted for those students who have fulfilled

the minimum academic and residential requirement i.e. 2 years (4 semesters) and completed the minimum credit requirements for getting Degree.

17. Publication of articles

Part of the project may also be published in advance with the permission of the HOD. If any part is published the fact should be indicated in the certificate given by the chairman that the work has been published in part/full in the scientific or popular journals, proceedings, etc. The copies are to be enclosed in the project at the time of submission.

18. Evaluation of Project

18.1 The project submitted in partial fulfillment of a M.B.A. (Agri Business) shall be evaluated by an external examiner. The external examiner shall be a specialist in the student's major field of study from outside Annamalai University and shall be appointed by the University as per the recommendation of the Head of the Department.

18.2 **The external examiner will send the evaluation report in duplicate one marked to the Controller of Examination and another to the Head of the Department along with the corrected copy of the thesis. If the report is favourable, Viva-Voce will be arranged by the Head of the Department concerned and conducted by the Advisory Committee. The chairman of the advisory committee shall send the recommendations of the examining committee to the Controller of Examinations through Head of the Department after the student duly carries out the corrections/ suggestions mentioned by the external examiner (a certificate to be enclosed along with the recommendation). On the unanimous recommendation of the committee and with the approval of the University, the degree shall be awarded to the candidate.**

18.3 In case of rejection of the project by the external examiner, the Controller of Examinations may on the recommendation of the Head of the Department concerned and Advisory Committee refer the project for valuation by a second external examiner chosen by the University. If the second external examiner recommends the project for acceptance, Viva-Voce will be conducted.

18.4 If the revision of the project is recommended, resubmission must be done by the candidate concerned after a minimum of six months. The revised version should be sent to the examiner who recommended revision.

18.5 **After incorporating the suggestions of the examiners and those received at the time of viva-voce, two hard bound copies of thesis should be submitted to the Department (one to the scholar and one to the chairperson) and two soft copies in CDs to the University. At the time of final submission, the advisory committee members should certify the corrections and suggestions carried out as indicated by the examiners. However, fellowship holder has to submit a hard bound copy also as per the need, 3 copies of abstract of thesis (in 10-15 lines), 2 copies of the summary of the findings both in Tamil and English and also in C.D. form.**

19. Revision of project

If an examiner recommends for revision of project the following norms will be adopted.

19.1 For revision of draft, the thesis should be resubmitted after a minimum of one month from the date of communication from the controller of examination

19.2 At the time of submission, the advisory committee should give certificate for carrying out the corrections/recommendations. The resubmitted copies of project should be got corrected carrying out the necessary corrections indicated by the external examiner and necessary certificates obtained from the chairman and HOD before the conduct of the final viva-voce.

19.3 A fine prescribed by the University to be collected from the students at the time of resubmission of project.

20. Failure to appear for final Viva-voce/ Non submission of project after viva-voce.

20.1 If a candidate fails to appear before the examining committee for final viva-voce, on the date fixed by the HOD the following are the time frame and penalty.

20.2 The re-viva-voce must be completed within two years. An amount of penalty of fine prescribed by the University must be charged to the candidate.

20.3 After successful completion of project final viva-voce if a student fails to submit the corrected version of the thesis within 15 days he/she will be levied a fine prescribed by the University at the time of sending the proposal for result declaration.

21. In-plant training

In plant training is compulsory for all the students and each student should register 0+2 credits each in I, II & III semesters. The students will be placed in different Agro business units for a period of 2 weeks.

The students will be evaluated as follows:

Observation note book	**- 20 marks**	**By the teacher-in charge**
Discussion record	**- 20 marks**	
Project report	**- 40 marks**	**By the Examiner**
Viva-voce	**- 20 marks**	

22. Study tour

Study tour is compulsory for all the students and each student should register 0+1 credit in II and III semesters. A short trip of 7-10 days will be arranged with an objective to expose the students to the various business activities of agro industries/firm.

Attendance	**- 10 marks**	**By the teacher-in charge**
Management Aptitude	**- 10 marks**	
Tour dairy	**- 20 marks**	
Tour Record	**- 30 marks**	

Viva - voce - 30 marks By the Examiners

23. Result notification

23.1 After the completion of each semester, the student will be given the statement of marks by the controller of examinations

23.2 The transcript will be prepared by controller of examinations. The various subjects taken by a student along with the credits and the grade obtained shall be shown on his transcript. Based on the total credits admitted, the final Grade Point Average shall be calculated and given.

24. Award of medals

Medal should be awarded only if the student secures at least 8.0 OGPA, clears all courses in first attempt and in the programme having a batch of at least three students.

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PROGRAMME OUTCOMES (PO)
GECO 21 M.B.A. (Agri.Business)
1. The M.B.A (Agribusiness) programme will prepare the students to meet the challenges of the dynamic business environment by imparting pragmatic managerial skills which are incorporated in the curriculum. 2. This will help the Agri management graduates to have an edge over the regular management graduates in their corporate business performance. 3. This programme will also motivate the Agri business graduates to take up self employment ventures as successful entrepreneurs. 4. This programme will kindle the student's aptitude for novel and futuristic research thus they will imbibe the passion for pursuing Ph.D. whereby their prospects for recruitment as teaching faculties (Assistant Professors) will become bright.

Abstract of Distribution Pattern of Courses and Credit

Semester	Number of Courses	Credit
I	10	11 + 6 =17
II	9	8 + 6 = 14
III	11	8 + 8 = 16
IV	2	0 + 8 = 8
	Total credit	**27+28 = 55**

PO and Co Mapping Matrix

Correlation levels 1, 2 and 3 are as defined below:

1 - Low
2- Moderate/ Medium
3 - Substantial /High

DISTRIBUTION OF COURSES

Major Courses

S. No.	Course No.	Title	Credit Hr. T+P
1.	ABM 611	Principles of Management and Organizational Behaviour	2+0
2.	ABM 612	Managerial Economics	2+0
3.	ABM 613	Human Resource Management	2+0
4.	ABM 614	Production and Material Management	1+1
5.	ABM 615	Research Methodology in Business Management	1+1
6.	ABM 621	Agricultural Marketing Management	2+0
7.	ABM 622	Managerial Accounting and Control	1+1
8.	ABM 623	Agricultural Project Management	1+1
9.	ABM 624	Agribusiness Financial Management	2+0
10.	ABM 625	Operations Research	1+1
11.	ABM 626	Agri Business Environment, Business Law and Policy	1+0
		Total	**16+5=21**

Electives

1.	ABM 711 E1	Logistics and Supply Chain Management	
2.	ABM 711 E2	Farm Business Management	2+0
3.	ABM 711 E3	Sales and Distribution Management in Agri Business	
4.	ABM 712 E1	Entrepreneurship Development	
5.	ABM 712 E2	Rural and Service Marketing	2+0
6.	ABM 712 E3	Food Retail Management	
7.	ABM 713 E1	Insurance and Risk Management	
8.	ABM 713 E2	Communication for Management and Business	2+0
9.	ABM 713 E3	Management of Agricultural Input Marketing	
10.	ABM 714 E1	International Trade and Sustainability Governance	
11.	ABM 714 E2	Commodity Futures Trading	2+0
12.	ABM 714 E3	Capital and Commodity Markets	
		Total	**8+0 = 8**

Supporting Courses

1.	STA 613	Statistics for Business Management	2+1
2.	COM 611	Computer Applications for Agricultural Research	1+1
		Total	**3+2=5**

Seminar/In-plant Training/Study Tour/Project

1.	ABM 011; 021; 031	In-plant Training 011-0+2; 021-0+2; 031-0+2	0+6
2.	ABM 022; 032	Study Tour 022-0+1; 033-0+1	0+2
3.	ABM 033	Seminar	0+1
4.	ABM 034; 044	Project 034-0+4; 044-0+8	0+12
		Total	**0+21 = 21**
		Grand Total	**27+28=55**

Non Credit Compulsory Courses

1.	PGS 611	Research Data Analysis	0+1
2.	PGS 612	Technical Writing and Communication Skills (English)	0+1
3.	PGS 623	Basic Analytical Techniques	0+1
4.	PGS 624	Library and Information Services (Library Science)	0+1
5.	PGS 715 (e-course)	Intellectual Property and its Management in Agriculture	1+0
6.	PGS 716 (e-course)	Disaster Management (Agronomy)	1+0
7.		Value Added Course	6+0
		Total	**8+4=12**

VALUE ADDED COURSES (https://annamalaiuniversity.ac.in/studport/value_added_crs.php)

SEMESTER - WISE DISTRIBUTION OF COURSES

S. No.	Course Code	Title	Credit Hours
First Semester			
1.	ABM 611	Principles of Management and Organizational Behaviour	2+0
2.	ABM 612	Managerial Economics	2+0
3.	ABM 613	Human Resource Management	2+0
4.	ABM 614	Production and Material Management	1+1
5.	ABM 615	Research Methodology in Business Management	1+1
6.	STA 613	Statistics for Business Management	2+1
7.	COM 611	Computer Applications for Agricultural Research	1+1
8.	ABM 011	In-plant Training	0+2
9.	PGS 611	Research Data Analysis(0+1)	-
10.	PGS 612	Technical Writing and Communication Skills (0+1)	-
		Total	**11+6 = 17**
Second Semester			
1.	ABM 621	Agricultural Marketing Management	2+0
2.	ABM 622	Managerial Accounting and Control	1+1
3.	ABM 623	Agricultural Project Management	1+1
4.	ABM 624	Agribusiness Financial Management	2+0
5.	ABM 625	Operations Research	1+1
	ABM 626	Agri Business Environment, Business Law and Policy	1+0
6.	ABM 021	In-plant Training	0+2
7.	ABM 022	Study Tour	0+1
8.	PGS 623	Basic Analytical Techniques(0+1)	-
9.	PGS 624	Library and Information Services (0+1)	-
		Total	**8+6 = 14**
Third Semester			
1.	EAM 711 E1, E2, E3	Elective course	2+0
2.	EAM 712 E1,E2,E3	Elective course	2+0
3.	EAM 713 E1,E2,E3	Elective course	2+0
4.	EAM 714 E1,E2,E3	Elective course	2+0
5.	ABM 031	In-plant Training	0+2
6.	ABM 032	Study Tour	0+1
7.	ABM 033	Seminar	0+1
8.	ABM 034	Project	0+4
9.	PGS 715 (e-course)	Intellectual Property and its Management in Agriculture(1+0)	-
10.	PGS 716 (e-course)	Disaster Management (1+0)	-
11.		Value Added Course(3+0)*	-
		Total	**8+8 = 16**
Fourth Semester			
1.	ABM 044	Project	0+8
2.		Value Added Course(3+0)	-
		Total	**0+8 = 8**

Grand Total	**27+28 = 55**

***** As per the recommendation of members of the Board of Studies (meeting held on 27.11.2019), the non credit compulsory value added course (3+0) in the third semester was replaced with PGS 717 Constitution of India (1+ 0) for the students admitted from 2019-20 onwards.

ABM 611 Principles of Management and Organizational Behaviour (2+0)

Learning Objectives

- **To make the students understand the basic management concepts**
- **To identify the role of management practices in agri business**
- **to acquaint the learner with meaning and concepts of organizational behaviour**

Theory

Unit-I : Basics in management

Nature, scope and significance of management - evolution of management thought - approaches to management - functions of a manager. Planning - types, steps, process, strategies, policies, MBO, strategic planning process, SWOT analysis. Organizing - structure and process, line staff, authority and responsibility.

Unit-II : Management functions

Staffing - selection process, span of control, delegation. Directing - training, communication and motivation. Controlling - significance, process, techniques, standards and benchmarks - management audits.

Unit-III : Basic organizational behaviour

Nature, scope and significance of organizational behaviour - evolution and historical background of organizational behaviour - models of organizational behaviour - foundations of individual behaviour - diversity. Micro organizational behaviour - personality, self-concept, self-esteem and self-efficacy, attitudes, perception, power - types and structures.

Unit-IV : Motivation and leadership

Motivation - types of motivation - theories of motivation - applications of motivation. Transactional analysis - interpersonal relations - understanding determinants and developing leadership styles and influence process. Leadership theories - types of leaders - effective leader. Group dynamics - types of groups - group formation - group decision making - team building.

Unit-V : Organizational culture

Organizational culture or climate - concepts, dimensions, ethos, determinants. Organizational conflicts - concepts, sources, implications and management. Organizational changes - types, resistances to change - role of change agents - organizational effectiveness - achieving organizational effectiveness.

Theory schedule

1. **Nature, scope and significance of management**
2. **Evolution of management thought**
3. **Approaches to management**
4. **Functions of a manager**
5. **Planning - types, steps, process, strategies, policies**
6. **MBO, strategic planning process, SWOT analysis**
7. **Organizing - structure and process, line staff, authority and responsibility**
8. **Staffing - selection process**
9. **Span of control - delegation**
10. **Directing - training, communication and motivation**
11. **Controlling - significance, process, techniques**
12. **Standards and benchmarks, management audits**
13. **Nature, scope and significance of organizational behaviour**
14. **Evolution and historical background of organizational behaviour**
15. **Models of organizational behaviour**
16. **Foundations of individual behaviour - diversity**
17. **Mid semester examination**
18. **Micro organizational behaviour**
19. **Personality, self-concept, self-esteem and self-efficacy**
20. **Attitudes, perception, power - types and structures**
21. **Motivation - types of motivation**

22. **Theories of motivation**
23. **Applications of motivation**
24. **Transactional analysis**
25. **Interpersonal relations-understanding, determinants and developing leadership styles and influence process**
26. **Leadership theories**
27. **Types of leaders and effective leader**
28. **Group dynamics - types of groups, group formation**
29. **Group decision making, team building**
30. **Organizational culture or climate - concepts**
31. **Dimensions, ethos, determinants of organizational culture**
32. **Organizational conflicts - concepts, sources, implications and management**
33. **Organizational changes - types, resistances to change, role of change agents**
34. **Organizational effectiveness - achieving organizational effectiveness**

Course outcome

At the end of the course students will be able to

1. Understand the current developments in management practices.
2. Identify and apply appropriate management techniques for managing contemporary organization.
3. Know how managers align the planning process with mission and vision.
4. Discuss organizational process from different theoretical perspectives.
5. Understand organizational conflicts and identify the way to achieve organizational effectiveness.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			2
CO2	3			
CO3		2		3
CO4	3			3
CO5		3	2	

Reference books

1. **Fred Luthans, 1998. *Organizational Behaviour*, Tata McGraw Hill, New Delhi.**
2. **Gupta, C.B., 2000. *Management Theory and Practice*, Sultan Chand and Sons, New Delhi.**
3. **Harold Koontz and Keing Weighhrich, *Essentials of Management*, McGraw Hill, New Delhi.**
4. **Prasad, L.M., 1998. *Principles and Practices of Management*, Sultan Chand and Sons, New Delhi.**
5. **Rao, V.S.B., and P.S. Narayana, 1998. *Principles and Practices of Management*, Konark Publishing Pvt. Ltd., New Delhi.**
6. **Singh, S.K., 2006. *Agricultural Management (Vol. I)*, Mittal Publications, New Delhi.**
7. **Stephen P Robbins, 2007. *Organizational Behaviour*, Prentice Hall, New Delhi.**

ABM 612 Managerial Economics (2+0)

Learning Objective

- **To equip the students with the basic micro and macro- economic concepts**
- **To explain theories with special reference to agri -business**
- **To develop analytical skills of the students in solving agri -business problems**

Theory

Unit-I : Managerial economics - introduction

Scope of managerial economics - objectives of the firm and basic economic principles - mathematical concepts used in managerial economics.

Unit-II : Demand analysis

Indifference curve - consumer's surplus. Demand analysis - meaning, types - determinants of demand - demand function - demand elasticity - demand forecasting techniques.

Unit-III : Production, cost concepts and supply functions

Diminishing marginal returns - profit maximization - production functions - least cost input combination - factor productivities and returns to scale. Cost concepts - cost output relationship - short and long run supply functions.

Unit-IV : Market structure and pricing analysis

Pricing - determinants of price - pricing under different market structures - pricing of joint products - pricing methods in practice. Barriers to entry - strategic versus structural, switching costs - network effects - capital requirements - learning curve - control of resources. Legal barriers - patents, copyrights, trademarks, licenses. Competitive advantage - positioning strategy - cartels - welfare cost of monopoly - government policies and pricing.

Unit-V : Macroeconomic concepts related to agri business

The national income - circular flow of income - consumption, investment and saving - money - functions - demand and supply - inflation - economic growth - business cycles and business policies - business decisions under uncertainty. Current streams of thought

Theory schedule

1. **Scope of managerial economics**
2. **Objectives of the firm and basic economic principles**
3. **Mathematical concepts used in managerial economics**
4. **Indifference curve - consumer's surplus**
5. **Demand analysis - meaning, types**
6. **Determinants of demand**
7. **Demand function**
8. **Demand elasticity**
9. **Demand forecasting techniques**
10. **Diminishing marginal returns**
11. **Profit maximisation**
12. **Production functions**
13. **Least - cost input combination**
14. **Factor productivities and returns to scale**
15. **Cost concepts**
16. **Cost-output relationship**
17. **Mid semester examination**
18. **Short and long run supply functions**
19. **Pricing - determinants of price**
20. **Pricing under different market structures**
21. **Pricing of joint products - pricing methods in practice**
22. **Barriers entry - strategic versus structural, switching costs**
23. **Network effects - capital requirements**

24. **Learning curve - control of resources**
25. **Legal barriers - patents, copyrights, trademarks, licenses.**
26. **Competitive advantage - positioning strategy - cartels - welfare cost of monopoly**
27. **Government policies and pricing**
28. **The national income - circular flow of income**
29. **Consumption - investment and saving**
30. **Money - functions**
31. **Demand and supply**
32. **Inflation - economic growth**
33. **Business cycles and business policies**
34. **Business decisions under uncertainty**

Course outcome

At the end of the course students will be able to

1. Understand the roles of managers in firm.
2. Analyze the demand and supply conditions.
3. Design competition strategies, including costing, pricing, product differentiation and market environment.
4. Analyse the decisions which are taken under different marketing structure.
5. Analyse the real world business problems with a systematic theoretical frame work.

CO-PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	2		
CO2	3	3		
CO3	3		2	3
CO4		3		3
CO5		2		2

Reference books

1. **Dwivedi, D.N., 2002. *Managerial Economics*, Vikash Publication, New Delhi.**
2. **Gupta, G.S., 1997. *Managerial Economics*, Tata McGraw Hill, New Delhi.**
3. **Jhingan, M.L, 2001. *Macro Economic Theory*, Konark Publishers, Pvt. Ltd., Chennai.**
4. **Mehtha, P.L., 2000. *Managerial Economics - Analysis, Problems and Cases*, Sultan Chand and Sons, New Delhi.**
5. **Sankaran, 2001. *Business Economics*, Progressive Corporation Pvt. Ltd., Bombay.**
6. **http://cengagesites.com/academic/?site=5215**
7. **http://www.pearsonhighered.com/keat/**

ABM 613 Human Resource Management (2+0)

Learning Objective

- **To expose the learner to the field of human resource management**
- **To provide focus on human resource practices and their utility for managers**

Theory

Unit-I : Introduction to human resource management

Introduction to human resource management - human resource planning - nature and significance - job analysis, job description, job specification, job enlargement, job enrichment, job rotation, job evaluation.

Unit-II : Recruitment and selection

Recruitment and selection process - induction. Training and human resource development - nature, significance process, techniques - strategic human resource management - process and techniques - internal mobility including transfers, promotions, employee separation - building employee commitment - promotion from within sources - induction.

Unit-III : Performance appraisal

Performance appraisal - significance and methods - compensation management - wage and salary administration - wage fixation, fringe benefits, incentive payment, bonus and profit sharing - 360 degree appraisal.

Unit-IV : Industrial relations

Industrial relations - role and status of trade unions - collective bargaining - worker's participation in management - career planning and employee retention - employee security.

Unit-V : Employee welfare measures

Quality of work life - employee welfare measures - disputes and grievance handling procedures - arbitration and adjudication - health and safety of human resource - human resource accounting - human resource outsourcing - talent management. Current streams of thought

Theory schedule

1. **Introduction to human resource management**
2. **Human resource planning - nature and significance**
3. **Job analysis - job description**
4. **Job specification - job enlargement**
5. **Job enrichment - job rotation - job evaluation**
6. **Recruitment and selection process - induction**
7. **Training and human resource development - nature, significance, process and techniques**
8. **Strategic human resource management - process and technique**
9. **Internal mobility including transfers, promotions, employee separation**
10. **Building employee commitment**
11. **Promotion from within sources - induction**
12. **Performance appraisal - significance and methods**
13. **Compensation management**
14. **Wage and salary administration**
15. **Wage fixation - fringe benefits**
16. **Incentive payment, bonus**
17. **Mid semester examination**
18. **Profit sharing**
19. **360 degree appraisal**
20. **Industrial relations**
21. **Role and status of trade unions**
22. **Collective bargaining**
23. **Worker's participation in management**

24. **Career planning**
25. **Employee retention**
26. **Employee security**
27. **Quality of work life**
28. **Employee welfare measures**
29. **Disputes and grievance handling procedures**
30. **Arbitration and adjudication**
31. **Health and safety of human resource**
32. **Human resource accounting**
33. **Human resources outsourcing**
34. **Talent management**

Course outcome

At the end of the course students will be able to

1. Understand the importance of human resources and their effective management in organization.
2. Identify the current practice of recruitment.
3. Demonstrate the different performance measuring techniques.
4. Understand role and status of trade unions.
5. Indentify various welfare measures taken by agro industries for the benefit of their workers.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	2		
CO2	2			
CO3			2	3
CO4				3
CO5		3		2

Reference books

1. **Ashwathapa, K., 1997. *Human Resource Management*, Tata McGraw, New Delhi.**
2. **Garry, D., 2001. *Human Resource Management*, 7th Ed., Prentice-Hall of India, New Delhi.**
3. **Mamoria, C.B., 1996. *Personnel Management*, Himalaya Publication House, New Delhi.**
4. **Subba Rao, P., 2004. *Essentials of Human Resource Management and Industrial Relations*, Himalaya Publication House, New Delhi.**
5. **Venkantavatnam, C.S. and Srivastav B.K., 1991. *Personnel Management and Human Resources*, Tata McGraw-Hill, New Delhi.**
6. **www.ximb.ac.in/library/e-Resources1.html**
7. **www.hrmguide.com**
8. **www.humanresources.about.com**
9. **www.managementhelp.org/hr_mgmnt/hr_mgmnt.htm**

ABM 614 Production and Material Management (1+1)

Learning Objective

- **To expose the learner to the field of production and material management**
- **To impart knowledge of the basic concepts**
- **To explain tools and functions of production and material management**

Theory

Unit-I : Introduction - production management

Production management - meaning, nature and scope - historical evolution - process planning - plant capacity - product design and development - make or buy decisions - use of cross over chart for selection processes - plant location - factors - multiplant location decision.

Unit-II : Production planning

Productivity variables and productivity measurement - production planning - types of plans - sales forecasting - economic batch quantity. Production control - scheduling - dispatching - routing - process control - flow control of materials - inspection - evaluation - line of balance.

Unit-III : Maintenance management

Maintenance management - objectives, types, maintenance schedule. Quality control - purpose - sampling by variables and attributes - work study - methods - work environment industrial safety - purpose of time study - stop watch time study.

Unit-IV : Material management

Nature and scope of material management - determinants of right materials - forecasting - purchase management - value analysis - purchase negotiations - vendor rating - costing and storing of materials - procurement methods and process techniques - indenting - planning - codification - quality specification - TQM, ISO standards and their importance - introduction to re-engineering - value engineering.

Unit-V : Inventory management

Inventory management - inventory models - control techniques - location of warehouses - stores - procedures - inspection - safety management - issues and reorders checking. Current streams of thought

Practical

Plant layout - types, factors - visit to an industrial plant - exercises on production management - case analysis on production management - exercise on production planning - control - case analysis on production planning - control - exercises on PERT - exercises on CPM - exercises on quality control - exercises on inventory management - vendor rating - EOQ - control systems - visit to organizations - presentation of case analysis.

Theory schedule

1. **Production management - meaning, nature and scope - historical evolution**
2. **Process planning - plant capacity - product design and development**
3. **Make or buy decisions - use of cross over chart for selection processes**
4. **Plant location - factors - multiplant location decision**
5. **Productivity variables and productivity measurement - production planning - types of plans - sales forecasting - economic batch quantity**
6. **Production control - scheduling - dispatching - routing - process control - flow control of materials - inspection - evaluation - line of balance**
7. **Maintenance management - objectives, types, maintenance schedule**
8. **Quality control - purpose - sampling by variables and attributes - work study - methods - work environment industrial safety - purpose of time study - stop watch time study**
9. **Mid semester examinations**
10. **Nature and scope of material management**
11. **Determinants of right materials – forecasting**
12. **Purchase management - value analysis - purchase negotiations - vendor rating**

13. **Costing and storing of materials**
14. **Procurement methods and process technique**
15. **Indenting - planning - codification - quality specification - TQM, ISO standards and their importance - introduction to re-engineering, value engineering**
16. **Inventory management - inventory models - control techniques**
17. **Location of warehouse - stores - procedures - inspection - safety management - issues and reorders checking**

Practical schedule

1. **Plant layout - types - factors**
2. **Visit to an industrial plants**
3. **Case study on product planning**
4. **Exercises on production management**
5. **Case analysis on production management**
6. **Exercise on production planning**
7. **Case analysis on production planning - control**
8. **Exercises on PERT**
9. **Exercises on CPM**
10. **Exercises on quality control**
11. **Exercises on quality control (contd.)**
12. **Exercises on inventory management I - vendor rating**
13. **Exercises on inventory management II - EOQ**
14. **Exercises on inventory management III - control systems**
15. **Visit to organization related to agribusiness**
16. **Visit to organization related to agribusiness**
17. **Presentation of case analysis**

Course outcome

At the end of the course students will be able to

1. Identify the scope for integrating materials management function over the logistics and supply chain operations.
2. Analyze the materials in storage, handling. Packaging. Shipping distribution and standardizing.
3. Identify various purchasing method and inventory controlling techniques
4. Analyse the materials in storage, handling, packing, shipping distributing and standardizing.
5. Identify various purchasing method and inventory controlling techniques.

CO - PO MAPPING

	PO1	PO2	PO3	PO4
CO1	2			3
CO2		3	3	
CO3		3	2	
CO4	3			3
CO5	3	2		

Reference books

1. Alan Muhlemann, John Oakland and Keith Lockyer, 2000. *Production and Operations Management*, Macmillan India Ltd., New Delhi.
2. Chary, S.N., 2001. *Production and Operational Management*, Tata McGraw-Hill Publishing Company Ltd., New Delhi.

3. Gopalakrishnan, P and Sundaram. M., 2002. *Materials Management - An Integrated Approach*, Prentice Hall of India Ltd., New Delhi.
4. Lal, A.B., 2000. *Inventory Models and the Problems of Price Fluctuations*, Shree Publishing House, Bombay.
5. Verma, M.M., 2001. *Materials Managemen*t, Sultan Chand and Sons Educational Publishers, New Delhi.

ABM 615 Research Methodology in Business Management (1+1)

Learning Objectives

- **To develop an understanding of research methodology**
- **To understand process and techniques of research**

Theory

Unit-I : Research process

Meaning, types, and process of research - research methodology in management - exploratory, descriptive, experimental, diagnostic method - problem formulation, setting of objectives, formulation of hypotheses.

Unit-II : Data collection

Scales of measurement - nominal, ordinal, interval, ratio, likert scale and other scales - primary and secondary data - sources of data - instruments of data collection - data editing - classification - coding - validation - tabulation - presentation - analysis.

Unit-III : Sampling procedure

Concept of sampling, Sampling design - probability and non-probability sampling techniques including simple random sampling, stratified sampling, multi-stage sampling, systematic sampling, purposive sampling, quota sampling, judgment sampling, and convenience sampling - sample size determination - sampling and non-sampling errors.

Unit-IV : Tools of analysis

Role and uses of quantitative techniques in business decision making - use of equations - use of determinants and matrices in business decisions - frequency distribution - measures of central tendency - measures of variation - skewness and kurtosis - simple, partial, and multiple correlation - rank correlation - simple and multiple regression - discriminant and dummy variable analysis.

Unit-V : Report writing

Index numbers - hypothesis testing - ANOVA - factor analysis - cluster analysis - conjoint analysis - multi-dimensional analysis. Report writing - types of reports, essentials and contents of good report writing.

Practical

Exercises in problem identification. Project proposals - contents and scope. Formulation of objective and hypotheses. Assessment of data needs - sources of data - methods of collection of data. Methods of sampling - criteria to choose - discussion on sampling under different situations. Scaling techniques - measurement of scales. Preparation of interview schedule - field testing. Methods of conducting survey. Exercises on coding, editing, tabulation and validation of data. Preparing of data entry into computer. Hypothesis testing. Parametric and non-parametric tests. Exercises on format for thesis / report writing. Presentation of the results.

Theory schedule

1. **Meaning, types, and process of research - research methodology in management - exploratory, descriptive, experimental, diagnostic methods**
2. **Problem formulation - setting of objectives, formulation of hypotheses**
3. **Scales of measurement - nominal, ordinal, interval, ratio - likert scale and other scales**
4. **Primary and secondary data - sources of data - instruments of data collection**
5. **Data editing, classification, coding, validation, tabulation, presentation, analysis**
6. **Concept of sampling - sampling design - probability and non-probability sampling techniques including simple random sampling, stratified sampling**
7. **Multi-stage sampling, systematic sampling, purposive sampling, quota sampling, judgment sampling, and convenience sampling**
8. **Sample size determination, sampling and non-sampling errors**
9. **Mid semester examination**
10. **Role and uses of quantitative techniques in business decision making - use of equations**

11. **Use of determinants and matrices in business decisions**
12. **Frequency distribution, measures of central tendency**
13. **Measures of variation, skewness and kurtosis, simple, partial, and multiple correlation, rank correlation**
14. **Simple and multiple regression, discriminant and dummy variable analysis**
15. **Index numbers, hypothesis testing, ANOVA**
16. **Factor analysis, cluster analysis, conjoint analysis, multi-dimensional analysis etc**
17. **Report writing: types of report, essentials and contents of good report writing**

Practical schedule

1. **Exercises in problem identification**
2. **Project proposals - contents and scope**
3. **Formulation of objective and hypotheses**
4. **Assessment of data needs - sources of data - methods of collection of data**
5. **Methods of sampling - criteria to choose**
6. **Discussion on sampling under different situations - scaling techniques**
7. **Measurement of scales**
8. **Preparation of interview schedule**
9. **Field testing**
10. **Methods of conducting survey**
11. **Exercises on coding, editing, tabulation and validation of data**
12. **Preparing of data entry into computer**
13. **Hypothesis testing**
14. **Parametric tests**
15. **Non-parametric tests**
16. **Exercises on format for thesis / report writing**
17. **Presentation of the results**

Course outcome

At the end of the course students will be able to

1. Grasp the significance of literature study, case study and structured surveys in agri business research.
2. Know the different methods to collect data and coding of data.
3. Determine the appropriate sample size and sampling methods.
4. Select the variable related to research problem and to analyse using econometric methods.
5. Test the hypothesis and write the research report.

CO - PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	3		3
CO2		3	3	
CO3	2		3	
CO4			2	3
CO5		2		3

Reference books

1. **Cooper D.R and Schindler P.S., 2006. *Marketing Research Concepts and Cases*, Tata McGraw Hill, New Delhi.**
2. **Dwivedi D.N., 2002. *Managerial Economics*, Vikash Publication, New Delhi.**

3. **Gupta G.S., 1997. *Managerial Economics*, Tata McGraw Hill, New Delhi.**
4. **Jhingan, M.L, 2001. *Macro Economic Theory*, Konark Publishers, Pvt. Ltd., Chennai.**
5. **Mehtha P.L., 2000. *Managerial Economics - Analysis, Problems and Cases*, Sultan Chand and Sons, New Delhi.**
6. **Sankaran, 2001. *Business Economics*, Progressive Corporation Pvt. Ltd., Bombay.**

ABM 621 Agricultural Marketing Management (2+0)

Learning Objective

- **To impart the students an understanding of concepts**
- **To identify various policies, strategies and decisions relating to agricultural marketing management**

Theory

Unit-I : Introduction to marketing management

Meaning and scope - agricultural marketing and economic development. Agricultural market structure - meaning, components and dynamics of market structure. Marketing strategy - meaning and significance - formulation of marketing strategy. Agribusiness marketing environment - design of marketing mix - market segmentation and targeting.

Unit-II : Customer behaviour and competitive strategies

Building customer value - satisfaction and loyalty. Consumer behaviour - meaning, factors influencing consumer behaviour and stimuli response model. Organizational buying - participants, process, managing business to business customer relationships. Identifying and analyzing competition - benchmarking and competitive strategies. Brand management - stategy, extensions and portfolio.

Unit-III : Product management

Product management - product management process - decisions - new product development - significance and classification of new product - stages and estimation of demand of new product - product life cycle.

Unit-IV : Pricing policies and promotional management

Pricing policies and practices for agribusiness - determinants of price - objectives of pricing policies and pricing methods. Marketing communication - objectives, factors. Promotional management - advertising, planning and execution - sales promotion, grading and standardization.

Unit-V : Distribution management

Distribution management - storage, warehousing and transportation management for agricultural products - marketing agencies/intermediaries - roles and functions. Distribution channels involved in agribusiness. Current streams of thought

Theory schedule

1. **Meaning and scope - agricultural marketing and economic development**
2. **Agricultural market structure - meaning, components**
3. **Dynamics of market structure**
4. **Marketing strategy - meaning and significance, formulation of marketing strategy**
5. **Agribusiness marketing environment**
6. **Design of marketing mix**
7. **Market segmentation and targeting**
8. **Determinants of consumer's behaviour**
9. **Building customer value, satisfaction and loyalty**
10. **Consumer behaviour - meaning, factors influencing consumer behaviour**
11. **Stimuli response model**
12. **Organizational buying - participants, process, managing business to business customer relationships**
13. **Identifying and analyzing competition**
14. **Benchmarking and competitive strategies**
15. **Brand management - strategy, extensions and portfolio**
16. **Product management**
17. **Mid semester examination**
18. **Product management process - decisions**
19. **New product development**

20. **Significance and classification of new product**
21. **Stages and estimation of demand of new product**
22. **Product life cycle**
23. **Pricing policies and practices for agribusiness**
24. **Determinants of price**
25. **Objectives of pricing policies and methods**
26. **Marketing communication - objectives, factors**
27. **Promotional management - concepts**
28. **Advertising, planning and execution**
29. **Sales promotion, grading and standardization**
30. **Distribution management**
31. **Storage and warehousing management for agricultural products**
32. **Transportation management for agricultural products**
33. **Marketing agencies/intermediaries - roles and functions**
34. **Distribution channels involved in agribusiness**

Course outcome

At the end of the course students will be able to

1. Formulate a marketing plan.
2. Construct strategies for the efficient distribution of agricultural products and services by knowing consumer behaviour.
3. Determine strategies for developing new products and services that are consistant with evolving market needs.
4. Evaluate results of marketing activities.
5. Analyse various channels involved in agribusiness for effective distribution of goods.

CO – PO MAPPING

	PO1	PO2	PO3	PO4
CO1		3		3
CO2	3	2		
CO3		3	3	2
CO4				3
CO5			3	

Reference books

1. **Acharya, S.S. and Agarwal N.L., 2004. *Agricultural Marketing in India*, 4th Ed., Oxford and IBH, New Delhi.**
2. **Kohls, R.L. and Uhj J.N., 2005. *Marketing of Agricultural Products*, 9th Ed., Prentice Hall, New Delhi.**
3. **Kotler, P., 2002. *Marketing Management - Analysis, Planning, Implementation and Control*, Pearson Edu., New Delhi.**
4. **Krishnamacharyulu, C. and Ramakrishan L., 2002. *Rural Marketing*, Pearson Edu., New Delhi.**
5. **Ramaswamy, V.S. and Nanakumari S., 2002. *Marketing Management*, 2nd Ed., Mac Millan India, New Delhi.**
6. **www.coolavenues.com/know/mktg/index.php3**
7. **www.aima-ind.org/ejournal/Bibliography2.asp**

ABM 622 Managerial Accounting and Control (1+1)

Learning Objective

- **To expose the learner to the concept and methods of management accounting**
- **To understand techniques, uses and applications of management accounting**

Theory

Unit-I : Financial accounting

Financial accounting - meaning, need, principles, concepts and conventions - branches of accounting - internal and external users of accounting - advantages and limitations of financial accounting - accounting standards.

Unit-II : Journal entry

The double entry system - its meaning and scope - the journal - cash book - ledger - trial balance - trading account - profit and loss account - balance sheet - entries and adjustments of different heads in different books and accounts. Introduction to company accounts.

Unit-III : Management accounting

Managing accounting - meaning, functions, scope, utility - limitations and tools of management accounting - analysis of financial statements - ratios - comparative and common size statements - cash flow and funds flow analysis - management audit and financial audit.

Unit-IV : Cost accounting

Cost accounting - nature, significance of cost accounting - classification of cost - costing for material, labour and overheads - marginal costing. Break even analysis - Cost volume profit analysis - its significance, uses and limitations. Standard costing - its meaning, uses and limitations - determination of standard cost - variance analysis - material, labour and overhead.

Unit-V : Budgeting

Responsibility accounting - its meaning and significance - cost profit and investment centers - accounting for price level changes - concepts - CPP and CCA methods. Budget and budgetary control - its meaning, uses and limitations - budgeting and profit planning - different types of budgets and their preparations - sales budget, purchase budget, production budget, cash budget, flexible budget, master budget, zero based budgeting. Current streams of thought

Practical

Preparation of journal - ledger - day book. Preparation of balance sheet - financial ratio analysis - income statement - depreciation methods - comparative statement - trend analysis - percentage analysis - standard costing - variance analysis - break even analysis - analysis of case studies - cash budget analysis - port folio management - investment analysis - capital market operations analysis - case studies.

Theory schedule

1. **Financial accounting - meaning, need, principles**
2. **Concepts and conventions - branches of accounting - internal and external users of accounting**
3. **Advantages and limitations of financial accounting - accounting standards**
4. **The double entry system - its meaning and scope - the journal - cash book - ledger**
5. **Trial balance - trading account - profit and loss account - balance sheet**
6. **Entries and adjustments of different heads in different books and accounts**
7. **Introduction to company accounts - managing accounting - meaning, functions, scope, utility**
8. **Limitations and tools of management accounting**

9. **Mid semester examination**
10. **Analysis of financial statements - ratios - comparative and common size statements - cash flow analysis - funds flow analysis - management audit and financial audit**
11. **Cost accounting - nature, significance of cost accounting - classification of cost - costing for material - labour and overheads**
12. **Marginal costing - break even analysis - cost volume profit analysis - its significance, uses and limitations**
13. **Standard costing - its meaning, uses and limitations - determination of standard cost, variance analysis - material, labour and overhead**
14. **Responsibility accounting - its meaning and significance - cost, profit and investment centers - accounting for price level changes**
15. **Concepts - CPP and CCA methods - budget and budgetary control - its meaning, uses and limitations**
16. **Budgeting and profit planning - different types of budgets and their preparations**
17. **Sales budget - purchase budget - production budget - cash budget - flexible budget - master budget - zero based budgeting**

Practical schedule

1. **Preparation of journal, ledger, day book**
2. **Preparation of balance sheet**
3. **Financial ratio analysis**
4. **Income statement**
5. **Depreciation methods**
6. **Comparative statement**
7. **Trend analysis**
8. **Percentage analysis**
9. **Standard costing**
10. **Variance analysis**
11. **Break-even analysis**
12. **Analysis of case studies**
13. **Cash budget analysis**
14. **Port folio management**
15. **Investment analysis**
16. **Capital market operations analysis**
17. **Case studies**

Course outcome

At the end of the course students will be able to

1. Understand principles of financial accounting.
2. Differentiate various investment, transactions and performance measurements.
3. Know the role and management audit and financial audit in management accounting.
4. Know the basics and significant of cost accounting techniques.
5. Prepare budget efficiently and measure performance by analyzing standards costs.

CO – PO MAPPING

	PO1	PO2	PO3	PO4
CO1	2	3		3
CO2	3			3
CO3		3		
CO4	3			
CO5			2	3

Reference books

1. **Chandra Prasanna, 2001. *Financial Management - Theory and Practice*, Tata Mc Graw Hill Publishing Company Ltd., New Delhi.**
2. **Kuchhal, S.C., 2000. *Financial Management*, Chaitanya Publishing House, Allahabad.**
3. **Maheswari, S.N., 2000. *Financial Management: Principles and Practice*, Sultan Chand and Sons, Educational Publishers, New Delhi.**
4. **Maheswari, S.N and Maheswari, S.K., 2007. *Financial Accounting*, 3rd Ed., Vikas Publ. House, New Delhi.**
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6. **www.en.wikipedia.org/wiki/Financial_ratio**
7. **www.referenceforbusiness.com**
8. **http://ocw.mit.edu/courses/economics**
9. **https://www.msu.edu/course/ECO/855**
10. **http://www.uky.edu/~deberti/prod/agprod5.pdf**
11. **http://www.csuchico.edu/ag/_assets/documents/syllabi/ABUS/ABUS%20301%20AG%20Production%20Econ%20Analysis.pdf**

ABM 623 Agricultural Project Management (1+1)

Learning Objective

- **To provide the students a thorough understanding on agricultural project selection, formulation**
- **To explain financial feasibility analysis, monitoring**
- **To understand evaluation techniques with special reference to agri business sector**

Theory

Unit-I : Agricultural projects - introduction

Project - definition - agricultural projects - project preparation and analysis - project cycle - identification, formulation, appraisal, implementation and evaluation - criteria for selection of agricultural projects.

Unit-II : Project identification and formulation

Project identification - entrepreneurs area of interest - background, land, building, water, investment. Sources of projects - resources - own and institutional. Enterprise - project cost, break even point, infrastructure, machinery, power, water, manpower requirement. Procedures for preparation of project proposal on crops, dairy, poultry, horticulture crops, forest, fisheries - data requirements and their format.

Unit-III : Project appraisal

Project appraisal - meaning and scope - types of project appraisal - technical, commercial, financial, economic and management appraisal - methodological issues in financial and economic evaluation of projects - measuring intangible costs and benefits - social cost and benefits analysis - choice among mutually exclusive projects.

Unit-IV : Project monitoring and evaluation

Methods of project monitoring and evaluation - cash flow analysis and discounting procedures - use of decision criteria NPV, BCR, Pay back period and IRR in decision making. Network techniques - PERT, CPM and crash programme methods - SWOT techniques. Analyzing risk in agricultural projects - sensitivity analysis - Decision tree analysis - Environment Impact Assessment (EIA).

Unit-V : Project management

Project management - project ranking - preparation of case studies - review of world bank aided projects - planning and preparation of macro level projects - irrigation, power, agricultural credit, input supply, cropping systems, animal husbandry, plantations, forestry, fisheries and agro-processing units. Current streams of thought

Practical

Developing skills in identification of agricultural development projects - formulation of projects - appraisal of projects using undiscounted and discounted techniques - review of world bank aided projects - market feasibility of the projects - use of sensitivity analysis - selection methods among mutually exclusive projects - repayment methods in projects - discussion of agricultural development projects - case studies - social cost benefit analysis - developing network techniques for project management - use of management tools in project monitoring - Analyzing risk in projects - project evaluation - project ranking - macro level agricultural development projects - agro processing projects - project presentation.

Theory schedule

1. **Project - definition - agricultural projects - project preparation and analysis**
2. **Project cycle - identification, formulation, appraisal, implementation and evaluation - criteria for selection of agricultural projects**
3. **Project identification - entrepreneurs area of interest - background, land, building, water, investment**
4. **Sources of projects - resources - own and institutional**
5. **Enterprise - project cost, break even point, infrastructure, machinery, power, water, manpower requirement**

6. **Procedures for preparation of project proposal on crops, dairy, poultry, horticulture crops, forest, fisheries - data requirements and their format**
7. **Project appraisal - meaning and scope - types of project appraisal - technical, commercial, financial, economic and management appraisal**
8. **Methodological issues in financial and economic evaluation of projects**
9. **Mid semester examination**
10. **Measuring intangible costs and benefits**
11. **Methods of project monitoring and evaluation**
12. **Cash flow analysis and discounting procedures - use of decision criteria NPV, BCR, Pay back period and IRR in decision making**
13. **Network techniques - PERT, CPM and crash programme methods**
14. **SWOT techniques**
15. **Analyzing risk in agricultural projects**
16. **Project management - project ranking - preparation of case studies**
17. **Review of world bank aided projects - planning and preparation of macro level projects - irrigation, power, agricultural credit, input supply, cropping systems, animal husbandry, plantations, forestry, fisheries and agro-processing units**

Practical schedule

1. **Developing skills in identification of agricultural development projects**
2. **Formulation of projects**
3. **Appraisal of project using undiscounted and discounted techniques**
4. **Review of world bank aided projects**
5. **Market feasibility of the projects**
6. **Use of sensitivity analysis**
7. **Selection methods among mutually exclusive projects**
8. **Repayment methods in project**
9. **Discussion of agricultural development projects - case studies**
10. **Social cost benefit analysis**
11. **Developing network techniques for project management**
12. **Use of management tools in project monitoring**
13. **Analyzing risk in projects**
14. **Project evaluation - project ranking**
15. **Macro level agricultural development projects**
16. **Agro processing projects**
17. **Project presentation**

Course outcome

At the end of the course students will be able to

1. Know the scope, cost, timing and quality of the project.
2. Identify project goals, constraints and resources requirements in consultation with stakeholders.
3. Understand social cost and benefit analysis and the make choice among mutually exclusive projects.
4. Evaluate the projects using programming techniques.
5. Apply project management practices to meet the needs of state holders from multiple sectors of the economy.

CO – PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	2		
CO2	3			3
CO3			3	3
CO4		3	3	
CO5	3	2	3	

Reference books

1. **Chandra, Prasanna, 1995. *Projects: Preparation, Appraisal, Budgeting and Implementation*, Tata Mc - Graw Hill Publications, New Delhi.**
2. **Gopal Krishan, P. and K. Nagarajan, 2005. *Project Management*, New Age Publishing, New Delhi.**
3. **Goel, B.B., 1989. *Project Management*, Deep and Deep Publications, New Delhi.**
4. **Gittinger, Price J., 1982. *Economic Analysis of Agricultural Projects*, The John Hopkins University Press, London.**
5. **Ramamoorthy, V.E., 2005. *Textbook of Project Management*, Macmillan, New Delhi.**
6. **www.edc-iitd.org**
7. **www.ediindia.org**
8. **www.projectmanagement.com**
9. **www.projectscenter.com**

ABM 624 Agribusiness Financial Management (2+0)

Learning Objective

- **To impart knowledge regarding various aspects of financial management for agribusiness**
- **To explain the functions of financial institutions**

Theory

Unit-I : Introduction to financial management

Importance, need and scope of financial management - classification of credit - credit needs in changing agriculture scenario - finance functions - investment financing - balance sheet - income statement - cash flow statement for agribusiness.

Unit-II : Financial planning

Financial planning and control - assessment of financial requirement of a agribusiness unit. Leverage - concept of leverage, financial and operating leverage - factor affecting capital structure - features of an optimal capital structure.

Unit-III : Working capital management

Working capital management - concept and components of working capital - need for working capital in agribusiness - management of cash and accounts receivables - inventory for agribusiness.

Unit-IV : Capital budgeting

Capital budgeting - steps and concept of capital budgeting - appraisal criteria - payback period, average rate of return, net present value, benefit-cost ratio and internal rate of return - sensitivity analysis.

Unit-V : Agribusiness finance system

Agri-business financing system in India - functioning of cooperative credit institutions, commercial banks, regional rural banks, NABARD, agro-industries corporation, etc in agribusiness financing. Current streams of thought

Theory schedule

1. **Importance, need and scope of financial management**
2. **Classification of credit**
3. **Credit needs in changing agriculture scenario**
4. **Finance functions**
5. **Investment financing**
6. **Balance sheet for agribusiness**
7. **Income statement for agribusiness**
8. **Cash flow statement for agribusiness**
9. **Financial planning and control**
10. **Assessment of financial requirement of a agribusiness unit**
11. **Leverage - concept of leverage**
12. **Financial leverage - operating leverage**
13. **Factor affecting capital structure**
14. **Features of an optimal capital structure**
15. **Working capital management**
16. **Concept and components of working capital**
17. **Mid semester examination**
18. **Need for working capital in agribusiness**
19. **Management of cash - accounts receivables**
20. **Inventory for agribusiness**
21. **Capital budgeting**
22. **Steps and concept of capital budgeting**
23. **Appraisal criteria**
24. **Payback period, average rate of return**
25. **Net present value**
26. **Benefit-cost ratio**
27. **Sensitivity analysis**
28. **Agri-business financing system in India**

29. **Internal rate of return**
30. **Functioning of cooperative credit institutions**
31. **Commercial banks in agribusiness financing**
32. **Regional rural banks in agribusiness financing**
33. **NABARD in agribusiness financing**
34. **Agro-Industries Corporation in agribusiness financing**

Course outcome

At the end of the course students will be able to

1. Grasp the significance of common investment criteria and project cash flows.
2. Know capital investments decision and financial policies to business valuations
3. Analyze working capital and inventory for agri business.
4. Identify relevant cash flows for capital budgeting projects and apply various methods to analyse projects.
5. Understand the functions of various financing institutions and analyse financing system in agribusiness sectors.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2	3		2	
CO3			3	3
CO4	3	2		
CO5			2	3

Reference books

1. **Chandra, P., 2000. *Financial Management*, Tata McGraw Hill, New Delhi.**
2. **Khan, M.Y. and Jain P.K., 2004. *Management Accounting*, Tata McGraw Hill, New Delhi.**
3. **Nelson, A.G and Murrey W.G., 1988. *Agricultural Finance*, Kalyani Publication, New Delhi.**
4. **Pandey, I.M., 1997. *Financial Management*, Vikas Publication House, New Delhi.**
5. **Van Horne, J.C., 1997. *Financial Management and Policy*, Prentice Hall of India, New Delhi.**
6. **www.logisticsmgmt.com**
7. **www.managementhelp.org**

ABM 625 Operations Research (1+1)

Learning Objectives

- **To acquaint the learner with the applications of operations research techniques**
- **To understand the use of these techniques in solving business problems**

Theory

Unit-I : Linear programming

Linear programming - objective, assumptions, formulation of linear programming problems - graphical method - simplex method - applications of operations research in functional areas of management.

Unit-II : Transportation and assignment problem

Transportation problem - formulation - initial basics feasible solution - degeneracy in transportation problem. Assignment problem - formulation algorithm - routing problems - sequencing problems.

Unit-III : Waiting line models

Waiting line problem - characteristics of a waiting line system - single channel model - multiple channel model - constant service time model - finite population model - sequencing and replacement models.

Unit-IV : Decision making under risk

Decision making under risk and uncertainties - decision problem - maximax criterion - maximin criterion - minimax regret criterion - laplace criterion - pay off tables - decision trees - expected value of perfect information - decision making environment.

Unit-V : Game theory

Game theory - two person zero sum game - competitive situations - characteristics competitive games simulation - network analysis - PERT and CPM.

Current streams of thought

Practical

Linear programming - formulation - graphical solution - simplex method - artificial variable technique - problem of degeneracy - concept of duality - formulation of primal - dual problems - dual simplex method - revised simplex method. Transportation problem - formulation - initial basic feasible solution and optimal solution - degeneracy in transportation problem. Assignment problem - routing problems - sequencing problems - waiting line problem - single channel model - multiple channel model - constant - service time model - finite population model - sequencing and replacement models. Game theory - two person zero sum games - problem solving in game theory using saddle points and dominance property. Net work problems - Critical Path Method (CPM) - Project Evaluation Review Technique (PERT) - time calculations.

Theory schedule

1. **Linear programming - objective, assumptions**
2. **Formulation of linear programming problems - graphical method - simplex method**
3. **Applications of operations research in functional areas of management**
4. **Transportation problem - formulation**
5. **Initial basics feasible solution - degeneracy in transportation problem**
6. **Assignment problem - formulation algorithm**
7. **Routing problems - sequencing problems**
8. **Waiting line problem - characteristics of a waiting line system, single channel model - multiple channel model**
9. **Mid semester examination**
10. **Constant service time model - finite population model**
11. **Sequencing and replacement models**
12. **Decision making under risk and uncertainties - decision problem - maximax**

criterion - maximin criterion

13. **Minimax regret criterion - laplace criterion - pay off tables - decision trees - expected value of perfect Information, decision making - environment**
14. **Game theory - introduction - two person zero sum games**
15. **Competitive situations and characteristics of competitive games simulation**
16. **Net work analysis - basic components - rules**
17. **Critical Path Method (CPM), Project Evaluation Review Technique (PERT), time calculations in net work problems**

Practical schedule

1. **Linear programming problems - formulation**
2. **Graphical solution - simplex method**
3. **Artificial variable technique - problem of degeneracy**
4. **Concept of duality - formulation of primal - dual problems**
5. **Dual simplex method - revised simplex method**
6. **Transportation problem - formulation**
7. **Initial basic feasible solution and optimal solution**
8. **Degeneracy in transportation problem**
9. **Assignment problem**
10. **Routing problems - sequencing problems**
11. **Waiting line problem - single channel model - multiple channel model**
12. **Constant service time model - finite population model**
13. **Sequencing and replacement models**
14. **Game theory - two person zero sum games**
15. **Problem solving in game theory using saddle points and dominance property**
16. **Net work problems - Critical Path Method (CPM)**
17. **Project Evaluation Review Technique (PERT) - time calculations**

Course outcome

At the end of the course students will be able to

1. Construct linear programming models for shortest path, maximum flow, minimum cost flow, critical path, transshipment problems.
2. Solve the problems using special solutions algorithms.
3. Set up decision models and use some solutions methods for nonlinear optimization problems.
4. Solve multi – level decision problem using dynamic programming method.
5. Use game theories in solving agri business problems.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3		3	3
CO2		2	2	
CO3			3	3
CO4	3	2		
CO5		3		3

Reference books

1. **Gupta, P.K. and D.S. Hira, 2004. *Operations Research*, Sultan Chand and Sons, New Delhi.**
2. **Kanji Swarup, P.K. Gupta and Man Mohan, 1999. *Operations Research*, Sultan Chand and Sons, New Delhi.**
3. **Taha, H.A., 1982. *Operations Research - An Introduction*, Macmillan, India Ltd, New Delhi.**
4. **Vohra, N.D., 2006. *Quantitive Techniques in Management*, Mc Graw Hill, New Delhi.**
5. **Wagner, H.M., 2005. *Principles of Operations Research*, Prentice Hall, New Delhi.**

ABM 626 Agri Business Environment, Business Law and Policy (1+0)

Learning Objectives

- **To expose learners to the environment in which the agribusiness is conducted**
- **To explain ethical issues and laws affecting business**
- **To understand micro and macro environmental forces and their impact on agribusiness**

Unit-I : Agri business environment

Role of agriculture in Indian economy - problems and policy changes in India relating to - farm supplies - farm production - agro processing and agricultural marketing.

Unit-II : Agri business sector

Structure of agriculture - linkages among sub sectors of the agribusiness sector - economic reforms in Indian agriculture - impact of liberalization, privatization and globalization on agri business sector.

Unit-III : Agri business policy

Agribusiness policies - concept and formulation - new dimensions in agri business environment and policy - public distribution systems and other policies.

Unit-IV : Introduction to India business law

Introduction to Indian legal system - The Indian Contract Act 1872. Contract - meaning, nature, significance, types of contract - essentials of a valid contract - acceptance - capacity to contract - free consent - performance of contract.

Unit-V : Legal acts

Companies Act 1956 incorporation - sale of goods act - commencement of business - types of companies management - winding of companies - negotiable instruments act - essential commodities act - APMC act - Consumer protection act - RTI act - MRTP act - major provisions and implications. Factory act - labour laws - Industrial dispute act - law of insurance. Current streams of thought

Theory schedule

1. **Role of agriculture in Indian economy**
2. **Problems and policy changes in India relating to farm supplies and farm production**
3. **Problems and policy changes in India relating to agro processing and agricultural marketing**
4. **Structure of agriculture - linkages among sub-sectors of the agribusiness sector**
5. **Economic reforms in Indian agriculture - impact of liberalization, privatization and globalization on agri business sector**
6. **New dimensions in agri business environment and policy**
7. **Public distribution systems and other policies**
8. **Introduction to Indian legal system**
9. **Mid semester examination**
10. **The Indian Contract Act 1872. Contract - meaning - nature - significance**
11. **Types of contract - essentials of a valid contract acceptance**
12. **Capacity to contract - free consent - performance of contract**
13. **Companies act 1956 incorporation - sale of goods act and commencement of business**
14. **Types of companies - management - winding of companies**
15. **Negotiable instruments act - essential commodities act**
16. **APMC act - consumer protection act**
17. **RTI act - MRTP act - major provisions and implications - factory act - labour laws - industrial dispute act - law of insurance**

Course outcome

At the end of the course students will be able to

1. Understand the general legal boundaries.
2. Identify legal issues that impact financial and other risks effecting business.
3. Identify and interpret sources of law effecting business.
4. Analyse the relevant case law for the purpose of finding legal precedents.
5. Analyse the legal issues affecting business.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	3		3
CO2		2		2
CO3		3		3
CO4		2		
CO5			2	3

Reference books

1. **Adhikary, M., 1986. *Economic Environment of Business*, Sulthan Chand and Sons, New Delhi.**
2. **Aswathappa, K., 1997. *Essentials of Business Environment*, Himalaya Publication, New Delhi.**
3. **Gulshan, S.S. and Kapoor, G.K., 2003. *Business Law Including Company Law*, 10th Edition, New Delhi.**
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ELECTIVES

ABM 711 E1 Logistics and Supply Chain Management (2+0)

Learning Objective

- **To introduce the students to the concepts and processes of agricultural supply chain management**
- **To understand supply chain drivers, network designs**
- **To explain demand forecasting, inventory planning, sourcing decisions and IT enablement of supply chain**

Theory

Unit-I : Concept of supply chain management

Supply chain: changing business environment - supply chain management - present need - conceptual model of supply chain management - evolution of supply chain management - supply chain management approach - traditional agri supply chain management approach - modern supply chain management approach - elements in supply chain management.

Unit-II : Demand management in supply chain

Demand management in supply chain - types of demand, demand planning and forecasting - operations management in supply chain - basic principles of manufacturing management.

Unit-III : Procurement management in supply chain

Procurement management in agri. supply chain. Purchasing Cycle - types of purchases - contract/corporate farming - classification of purchases: Goods or services. Traditional inventory management - material requirements planning, Just in Time (JIT), Vendor Managed Inventory (VMI).

Unit-IV : Logistic management in supply chain

Logistics management - history and evolution of logistics - elements of logistics management - distribution management - distribution strategies - pool distribution - transportation management - fleet management - service innovation - warehousing - packaging for logistics - Third-party logistics (TPL/3PL) - GPS Technology.

Unit-V : Information technologies

Concept of information technology - IT application in supply chain management - advanced planning and scheduling - supply chain management in electronic business - role of knowledge in supply chain management - performance measurement and controls in agri. supply chain management. Benchmarking - introduction, concept and forms of benchmarking. Current streams of thought

Theory schedule

1. **Supply chain - changing business environment - supply chain management - present need**
2. **Conceptual model of supply chain management**
3. **Evolution of supply chain management**
4. **Supply chain management approach - traditional agri. supply chain management approach**
5. **Modern supply chain management approach**
6. **Elements in supply chain management**
7. **Demand management in supply chain**
8. **Types of demand, demand planning and forecasting**
9. **Operations management in supply chain**
10. **Basic principles of manufacturing management**
11. **Procurement management in agri. supply chain - purchasing cycle**
12. **Types of purchases**
13. **Contract/corporate farming**
14. **Classification of purchases: goods or services**
15. **Traditional inventory management**
16. **Material requirements planning**

17. **Mid semester examination**
18. **Just in Time (JIT)**
19. **Vendor Managed Inventory (VMI)**
20. **Logistics management**
21. **History and evolution of logistics**
22. **Elements of logistics management**
23. **Distribution management, distribution strategies**
24. **Pool distribution**
25. **Transportation management**
26. **Fleet management**
27. **Service innovation - warehousing - packaging for logistics**
28. **Third-party logistics (TPL/3PL) - GPS technology**
29. **Concept of information technology - IT application in supply chain management**
30. **Advanced planning and scheduling**
31. **SCM in electronic business**
32. **Role of knowledge in supply chain management**
33. **Performance measurement and controls in agriculture - supply chain management**
34. **Benchmarking: introduction, concept and forms of benchmarking**

Course outcome

At the end of the course students will be able to

1. Understand fundamental supply chain management concepts, analyse and improve supply chain processes.
2. Understand basic principles of operations management in supply chain.
3. Apply logistic and purchasing concepts to improve supply chain operations.
4. Construct the supply chain management technique with corporate goals and strategies.
5. Apply information technology in supply chain management.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2	3	2		
CO3			3	3
CO4	2	2	3	
CO5			2	3

Reference books

1. **Altekar, R.V., 2006. *Supply Chain Management: Concepts and Cases*. Prentice Hall of India.**
2. **Monczka, R., Trent R and Handfield R., 2002. *Purchasing and Supply Chain Management*. Thomson Asia.**
3. **Van Weele, A.J., 2000. *Purchasing and Supply Chain Management Analysis Planning and Practice*. Vikas Publ. House, New Delhi.**
4. **Gibson, G. Vedamani., 2003. *Retail Management*, Jaico Publishing House, Mumbai.**
5. **Jishnu Hazra and Janat Shah, 2005. *Supply Chain Management*, Indian Institute of Management (Publications), Bangalore.**
6. **www.logisticsonline.com**
7. **www.supplychainmarket.com**

ABM 711 E2 Farm Business Management (2+0)

Learning Objective

- **To acquaint the students with the basic principles of farm management**
- **To analyse farm resources having alternatives within the framework of resource restrictions**

Theory

Unit-I : Scope of farm business management

Nature, scope, characteristics and role of farm business management - farm management decisions - farm management problems.

Unit-II : Principles of farm management

Principles of farm management decisions - principle of variable proportion - cost principle - principle of factor substitution - law of equi-marginal returns - opportunity cost principle - time comparison principle - principle of comparative advantage.

Unit-III : Tools of farm management

Tools of farm management and farm business analysis - valuation of farm assets - depreciation - net worth statement - income statement - cash flow statement. Farm planning and budgeting - enterprises budgeting - partial budgeting - complete budgeting - steps in whole farm planning and budgeting. Farm records and accounts - types and problems in farm records and accounts.

Unit-IV : Management of farm resources

Management of farm resources - land, labour, farm machinery, farm building, etc. Farm efficiency measures - physical efficiency, financial efficiency measures - break even point analysis.

Unit-V : Risk and uncertainty

Risk and uncertainty in farming - sources of uncertainty in farming, management strategy to counteract uncertainty and decision making process in farm business management under risk and uncertainty. Current streams of thought

Theory schedule

1. **Nature, scope, characteristics and role of farm business management**
2. **Farm management decisions**
3. **Farm management problems**
4. **Principles of farm management decisions**
5. **Principle of variable proportion**
6. **Cost principle**
7. **Principle of factor substitution**
8. **Law of equi-marginal returns**
9. **Opportunity cost principle**
10. **Time comparison principle**
11. **Principle of comparative advantage**
12. **Tools of farm management and farm business analysis**
13. **Valuation of farm assets**
14. **Depreciation methods**
15. **Networth statement**
16. **Income statement**
17. **Mid semester examination**
18. **Cashflow statement**
19. **Farm planning and budgeting**
20. **Enterprises budgeting**
21. **Partial budgeting**
22. **Complete budgeting**
23. **Steps in whole farm planning and budgeting**
24. **Farm records and accounts**
25. **Types and problems in farm records and accounts**
26. **Management of farm resources**
27. **Land, labour, farm machinery, farm building, etc**

28. **Farm efficiency measures**
29. **Physical and financial efficiency measures**
30. **Break even point analysis**
31. **Risk and uncertainty in farming**
32. **Sources of uncertainty in farming**
33. **Management strategy to counteract uncertainty**
34. **Decision making process in farm business management under risk and uncertainty**

Course outcome

At the end of the course students will be able to

1. Understand the farm management problems for taking decisions.
2. Gain the knowledge about principle of farm management.
3. Select of tools of farm management for various problems related to farm.
4. Identify the way to use farm resources efficiently.
5. Manage of farm resources under risk and uncertainty.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	3		3
CO2	3	3		
CO3		2	3	3
CO4			3	3
CO5		2		

Reference books

1. **Heady, E.O. and Jensen H., 1960. *Farm Management Economics*. Prentice Hall, New Delhi.**
2. **Johl, S.S., and Kapoor T.R., 1973. *Fundamentals of Farm Business Management*. Kalyani Publication, New Delhi.**
3. **Kahlon, A.S., and Singh K., 1992. *Economics of Farm Management in India*. Allied Publication, New Delhi.**
4. **Panda, S.C., 2007. *Farm Management and Agricultural Marketing*. Kalyani Publication, New Delhi.**
5. **Raju, V.T., and Rao S., 2000. *Economics of Farm Production and Management*, Oxford and IBH Publishing Company Pvt. Ltd., New Delhi.**
6. **Dhondyal, S.P., Singh G.N., 2011. *Production Economics and Farm Management*, Aman Publishing Company, Meerut.**

ABM 711 E3 Sales and Distribution Management in Agri Business (2+0)

Learning Objectives

- **To provide knowledge to students on the theory of sales management**
- **To identify practices of sales promotion and product management in agri business**

Theory

Unit-I : Introduction to sales management

Selling and marketing - selling and advertising - sales objectives - functions of sales management - duties and responsibilities of sales manager. Salesmanship - art, science and profession - types of salesmanship - advantages and limitations of salesmanship - qualities of a good salesman.

Unit-II : Sales management functions, selling process

Sales management - functions - sales planning, sales policy - sales organization - structuring and managing sales force - designing sales territories - fixing sales quota - controlling and motivating sales force. Selling processes - sizing up customers - AIDAS formula - sales promotion techniques - dealer and consumer promotion.

Unit-III : Training of salesman and methods of appraisal

Recruitment and selection of sales force - the need for sales - selection process. Training of salesman - importance, objectives, methods of training. Supervision of salesman - executive sales training programme. Appraising salesman's performance - methods of appraisal - indices of salesman's performance - compensation of sales force - principles of compensation to salesman - methods of compensation - additional compensator scheme.

Unit-IV : Distribution channels and marketing risk

Physical distribution - meaning - distribution mix - role of distribution in marketing. Transport - kinds, functions, advantages and limitations, managing transport - criteria for selecting good transport. The channels of distribution - its importance - selection of right channel - types of channels - dealer network. Managing marketing risk - types of risk - controlling risk - minimizing and managing risk.

Unit-V : Distribution environment - intermediaries

Distribution environment - competitors, extensive distribution - franchise selling, Public distribution - its special features. Distribution intermediates - their role and importance - types of intermediates - wholesaler and retailers - kinds of retailers - small scale and large scale retailers. Other intermediaries - brokers, commission agents, dealers, sole selling agents. Current streams of thought

Theory schedule

1. **Selling and marketing - selling and advertising - sales objectives**
2. **Functions of sales management - duties and responsibilities of sales manager**
3. **Salesmanship - art, science and profession, types of salesmanship**
4. **Advantages and limitations of salesmanship - qualities of a good salesman**
5. **Sales management - functions - sales planning, sales policy**
6. **Sales organization, structuring and managing sales force**
7. **Designing sales territories - fixing sales quota, controlling and motivating sales force**
8. **Selling processes - sizing up customers - AIDAS formula**
9. **Sales promotion techniques - dealer and consumer promotion**
10. **Recruitment and selection of sales force**
11. **The need for sales - selection process**
12. **Training of salesman - importance, objectives, methods of training**
13. **Supervision of salesman - executive sales training programme**
14. **Appraising salesman's performance - methods of appraisal**
15. **Indices of salesman's performance**
16. **Compensation of sales force - principles of compensation to salesman**

17. **Mid semester examination**
18. **Methods of compensation - additional compensator scheme**
19. **Physical distribution - meaning - distribution mix - role of distribution in marketing**
20. **Transport - kinds, functions, advantages and limitations**
21. **Managing transport - criteria for selecting good transport**
22. **The channels of distribution - its importance**
23. **Selection of right channel**
24. **Types of channels - dealer network**
25. **Managing marketing risk - types of risk**
26. **Controlling risk - minimizing and managing risk**
27. **Distribution environment**
28. **Competitors, extensive distribution - franchise selling**
29. **Public distribution - its special features**
30. **Distribution intermediates - their role and importance**
31. **Types of intermediates**
32. **Wholesaler and retailers - kinds of retailers**
33. **Small scale and large scale retailers**
34. **Other intermediaries - brokers, commission agents, dealers, sole selling agents**

Course outcome

At the end of the course students will be able to

1. Understand the roles and responsibilities of the sales managers.
2. Manage and enhance the sales force productivity and performance.
3. Know the methods to train sales force for an effective sales strategy.
4. Design and implement distribution channel strategy.
5. Manage the channels efficiently and effectively under different business environment.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2	3		2	
CO3	3		3	3
CO4		2	3	3
CO5		3	2	

Reference books

1. **Acharya and Govekar, 2001. *Marketing and Sales Management*, Himalaya Publishing House, Mumbai.**
2. **Bellur, V.V., 2001. *Sales Management*, Himalaya Publishing House, Bombay.**
3. **Philip Kotler, 2006. *Principles of Marketing*, Prentice Hall of India, New Delhi.**
4. **Ramasamy, V.S., 2001. *Marketing Management*, Macmillan, New Delhi.**
5. **Rom Markin, 2000. *Marketing Strategy and Management*, John Wiley Sons Inc., New York.**

ABM 712 E1 Entrepreneurship Development (2+0)

Learning Objective

- **To make the students understand the concept of entrepreneurship development skills for agri business**
- **To explain its application**

Theory

Unit-I : Concept of entrepreneurship development

Introduction - agri business - entrepreneur - qualities of entrepreneur - entrepreneurial process - entrepreneurial competencies and orientation. Innovation levels - types, process and drivers to improve the innovation competencies. Identification of business opportunities and guidelines for starting farm enterprises.

Unit-II : Classification of entrepreneurship

Types of entrepreneurship - food processing - export oriented units - agri inputs - organic product entrepreneurship - service entrepreneurs - certification entrepreneurs - clearing and forwarding entrepreneurs - machinery manufacturers.

Unit-III : Significance of entrepreneurship

Entrepreneurship - significance of entrepreneurship in economic development - entrepreneurship development programs - role of various institutions in developing entrepreneurship - life cycles of new business, environmental factors affecting success of a new business - reasons for the failure and visible problems of business.

Unit-IV : Business plan preparation

Developing effective business plans - procedural steps in setting up of an industry. Business feasibility analysis - techno, economic, financial and social cost benefit analysis. Network analysis - PERT and CPM.

Unit-V : Government schemes and social entrepreneurship

Government schemes and incentives for promotion of entrepreneurship - institutional support to business entrepreneurs - business incubation and entrepreneurship. Social entrepreneurship - concept and opportunities. Current streams of thought

Theory schedule

1. **Introduction to agri business**
2. **Entrepreneur - qualities of entrepreneurs**
3. **Entrepreneurial process**
4. **Entrepreneurial competencies and orientation**
5. **Innovation levels, types, process and drivers to improve the innovation competencies**
6. **Identification of business opportunities**
7. **Guidelines for starting farm enterprises**
8. **Types of entrepreneurship**
9. **Food processing**
10. **Export oriented units**
11. **Agri inputs entrepreneurship**
12. **Organic product entrepreneurship**
13. **Service entrepreneur**
14. **Certification entrepreneurs**
15. **Clearing and forwarding entrepreneurs**
16. **Machinery manufacturers**
17. **Mid semester examination**
18. **Entrepreneurship - significance of entrepreneurship in economic development**
19. **Entrepreneurship development programs**
20. **Role of various institutions in developing entrepreneurship**
21. **Life cycles of new businesses**
22. **Environmental factors affecting success of a new business**
23. **Reasons for the failure and visible problems of business**
24. **Developing effective business plans**

25. **Procedural steps in setting up of an industry**
26. **Business feasibility analysis**
27. **Techno, economic, financial and feasibility analysis**
28. **Social cost benefit analysis**
29. **Network analysis - PERT and CPM**
30. **Government schemes and incentives for promotion of entrepreneurship - I**
31. **Government schemes and incentives for promotion of entrepreneurship - II**
32. **Institutional support to business entrepreneurs**
33. **Business incubation and entrepreneurship**
34. **Social entrepreneurship - concept and opportunities**

Course outcome

At the end of the course students will be able to

1. Understand basic concepts in entrepreneurship developments.
2. Identify different type of entrepreneurship related agri business sector.
3. Assess opportunities and constraints for new business ideas.
4. Understand the systemic process to select and screen a business idea.
5. Discuss various schemes implemented by government for promotion of entrepreneurship.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2	3	3		3
CO3		2	3	
CO4	3		3	
CO5			2	3

Reference books

1. **Badi, R.V and N.V. Badi, 2007. *Entrepreneurship*, Vrinda Publication (p) Ltd, New Delhi.**
2. **David H. Holt., 2008. *Entrepreneurship*, New Venture Creation, PHI, New Delhi.**
3. **Nandan, H., 2007. *Fundamentals of Entrepreneurship Management*, Prentice Hall, New Delhi.**
4. **Peter F. Drucker, 2006. *Innovation and Entrepreneurship Practice and Principles*, 2006. HarperCollins, London.**
5. **Sahay, A., and M.S. Chhikara, 2007. *New Vistas of Entrepreneurship Challenges and Opportunities*, Excel Books, New Delhi.**

ABM 712 E2 Rural and Service Marketing (2+0)

Learning Objectives

- **To develop an understanding on the issues in rural markets and marketing environment**
- **To analyse consumer behaviour, distribution channels and marketing strategies**

Theory

Unit-I : Overview of rural marketing

Concept and scope of rural marketing - nature and characteristics of rural markets - potential of rural markets in India - rural communication and distribution.

Unit-II : Factors affecting rural marketing

Environmental factors, socio-cultural, economic, demographic, technological and other environmental factors affecting rural marketing.

Unit-III : Consumer's behaviour

Rural consumer's behaviour - behaviour of rural consumers and farmers - buyer characteristics and buying behaviour. Rural Vs urban markets - customer relationship management - rural market research - implications of rural market research.

Unit-IV : Rural marketing strategy

Rural marketing strategy - marketing of consumer durable and non-durable goods - services in the rural markets with special reference to product planning - product mix - pricing policy and pricing strategy - distribution strategy.

Unit-V : Promotion strategy

Promotion and communication strategy - media planning - planning of distribution channels - organizing personal selling in rural market in India - innovations in rural marketing. Current streams of thought

Theory schedule

1. **Concept and scope of rural marketing**
2. **Nature of rural markets**
3. **Characteristics of rural markets**
4. **Potential of rural markets in India**
5. **Rural communication and distribution**
6. **Environmental factors affecting rural marketing**
7. **Socio-cultural factors affecting rural marketing**
8. **Economic factors affecting rural marketing**
9. **Demographic factors affecting rural marketing**
10. **Technological factors affecting rural marketing**
11. **Other environmental factors affecting rural marketing**
12. **Rural consumer's behaviour**
13. **Behaviour of rural consumers**
14. **Behaviour of rural farmers**
15. **Buyer characteristics and buying behaviour**
16. **Rural Vs urban markets**
17. **Mid semester examination**
18. **Customer relationship management**
19. **Rural market research**
20. **Implication of rural market research**
21. **Rural marketing strategy**
22. **Marketing of consumer durable goods**
23. **Marketing of non-durable goods**
24. **Marketing of services in the rural markets with special reference to product planning**
25. **Product mix**
26. **Pricing policy and pricing strategy**
27. **Distribution strategy**
28. **Promotion strategy**

29. **Communication strategy**
30. **Media planning**
31. **Planning of distribution channels**
32. **Organizing personal selling in rural market in India**
33. **Innovations in rural marketing - I**
34. **Innovations in rural marketing - II**

Course outcome

At the end of the course students will be able to

1. Gain conceptual knowledge about rural marketing.
2. Understand the rural market distribution and factors affecting it.
3. Know about the consumer behavior and trend in rural marketing.
4. Know in detail about the service sector and apply the 7P's of service marketing.
5. Identify recent innovations in rural marketing.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2	3			3
CO3			3	
CO4		2		
CO5				3

Reference books

1. **Acharya, S.S. and N.L. Agarwal, 2008. *Agricultural Marketing in India*, Oxford and IBH, New Delhi.**
2. **Krishnamacharyulu, C. and Ramakrishan L., 2002. *Rural Marketing*, Pearson Edu., New Delhi.**
3. **Ramaswamy, V.S. and Nanakumari S., 2006. *Marketing Management*. 3rd Ed., MacMillan Publications, New Delhi.**
4. **Singh, A.K. and Pandey S., 2005. *Rural Marketing*, New Age Publications, New Delhi.**
5. **Singh Sukhpal, 2004. *Rural Marketing*, Vikas Publ. House., New Delhi.**
6. **http://miteshk.webs.com/RURALMARKETING.pdf**
7. **http://www.slideshare.net/**
8. **http://www.ijars.in/iJARS%20506.pdf**
9. **http://www.rmai.in/publication.html**
10. **http://www.bms.co.in/rural-marketing-notes/**

ABM 712 E3 Food Retail Management (2+0)

Learning Objectives

- **To assist the students in understanding the structure and working of food marketing system in India**
- **To examine how the system affects farmers, consumers and middlemen**
- **To illustrate the response of this dynamic marketing system to technological, socio-cultural, political and economic forces over time**

Theory

Unit-I : International food market

Introduction to international food market - India's competitive position in the world food trade - foreign investment in global food industry - retail management and food retailing - the nature of change in retailing - organized retailing in India - retailing and understanding food preferences of Indian consumers - food consumption and expenditure pattern - demographic and psychographic factors affecting food pattern of Indian consumer.

Unit-II : Value chain

Value chain in food retailing - principal trends in food wholesaling and retailing - the changing nature of food stores - various retailing formats - competition and pricing in food retailing - market implications of new retail developments - value chain and value additions across the chain in food retail - food service marketing.

Unit-III : Pricing strategies

4 P's in food retail management - brand management in retailing - merchandise pricing - pricing strategies used in conventional and non-conventional food retailing - public distribution system - promotion mix for food retailing - management of sales promotion and publicity - advertisement strategies for food retailers.

Unit-IV : Retail operations

Managing retail operations - managing retailers' finance - merchandise buying and handling - merchandise pricing - logistics - procurement of food products and handling transportation of food products.

Unit-V : Retail selling

Retail sales management types of retail selling - salesperson selection - salesperson training - evaluation and monitoring - customer relationship management - managing human resources in retailing - legal and ethical issues in retailing. Current streams of thought

Theory schedule

1. **Introduction to international food market**
2. **India's competitive position in world food trade**
3. **Foreign investment in global food industry**
4. **Retail management and food retailing**
5. **The nature of change in retailing**
6. **Organized retailing in India**
7. **Retailing and understanding food preferences of Indian consumers**
8. **Food consumption and expenditure pattern**
9. **Demographic and psychographic factor affecting food pattern of Indian consumer**
10. **Value chain in food retailing**
11. **Principal trends in food wholesaling and retailing**
12. **The changing nature of food stores**
13. **Various retailing formats**
14. **Competition and pricing in food retailing**
15. **Market implications of new retail developments**
16. **Value chain and value additions across the chain in food retail**
17. **Mid semester examination**
18. **Food service marketing**

19. **4 P's in food retail management**
20. **Brand management in retailing**
21. **Merchandise pricing, pricing strategies used in conventional and non-conventional food retailing**
22. **Public distribution system**
23. **Promotion mix for food retailing**
24. **Management of sales promotion and publicity**
25. **Advertisement strategies for food retailers**
26. **Managing retail operations and retailers' finance**
27. **Merchandise buying and handling, merchandise pricing**
28. **Logistics, procurement of food products and handling transportation of food products**
29. **Retail sales management**
30. **Types of retail selling**
31. **Salesperson selection, training, evaluation and monitoring**
32. **Customer relationship management**
33. **Managing human resources in retailing**
34. **Legal and ethical issues in retailing**

Course outcome

At the end of the course students will be able to

1. Understand the concepts of effective retailing.
2. Know the recent trends in retailing.
3. Possess the knowledge of pricing strategies in retail marketing.
4. Manage the various retail operations like finance, handling, buying, transportation etc.,
5. Understand customers relationship management and legal and ethical issues in retaining.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2		3		3
CO3	3		3	
CO4		2	3	
CO5				3

Reference books

1. **Acharya, S.S., and N.L., Agarwal, 2004. *Agricultural Marketing in India*, Oxford and IBH, New Delhi.**
2. **Berman and Evans, 2008. *Retail Management: A Strategic Approach*, 10th Ed., Prentice Hall of India, New Delhi.**
3. **Cox, 2006. *Retailing: An Introduction*, 5th Ed. Pearson Edu, New Delhi.**
4. **Levy, M., and Weitz B.W, 2004. *Retailing Management*, 5th Ed. McGraw Hill Publishing, New Delhi.**
5. **Potly, V.H., and M.J. Mulky, 1993. *Food Processing*, Oxford and IBH, New Delhi.**
6. **www.fssai.in**
7. **www.qavi.org/nabcb/accreditation/reg_bod_qms.php**
8. **www.qcin.org**

ABM 713 E1 Insurance and Risk Management (2+0)

Learning Objective

- **To provide the students a thorough knowledge on the principles of insurance**
- **To understand practices of risk management in agri business**
- **To analyse various insurance policies and schemes available for agri business**

Theory

Unit-I : Concept of risk and insurance

The concept of risk - kinds and classification of risks - assessment - the concept of insurance - types of general insurance, agriculture, fire, marine, engineering - insurance of property. Insurance professionals and intermediaries.

Unit-II : Principles of insurance

Basic principles of insurance - utmost good faith - insurable interest - material facts. Economic principles - sharing - subrogation - contribution. Legal principles - the Indian Contract Act, 1872 - nomination and assignment. Financial principles - premium funds - investments.

Unit-III : Agricultural insurance

Agricultural situation - types of agricultural insurance - scope and practices. Crop insurance - problems and remedies - crop insurance in other countries. Cattle insurance policy - valuation of cattle loans assessment - settlement of claims. Poultry insurance - miscellaneous insurance - shrimp culture, sericulture, apiculture, plantations, bio-gas, animal driven cart, agricultural pump sets.

Unit-IV : Basics in risk management

Risk and uncertainty - acceptable risks versus unacceptable risks - classification of risk - the cost of risk - handling risks. The scope and objective of risk management - measurement of risk and adjustment to risk - linear programming and marginal analysis - MOTAD - personal risk management.

Unit-V : Techniques of risk management

Risk identification - risk evaluations - statistical methods and probability concepts - decision taken under conditions of risk and uncertainty - risk avoidance - risk reduction and loss control - insurance - benefits and limitations - partial insurances - risk management and corporate objectives. Current streams of thought

Theory schedule

1. **Concept of risk in the context of agri business**
2. **Kinds and classification of risk - risk assessment**
3. **The concept of insurance**
4. **Types of general insurance - agriculture**
5. **General insurance - fire, marine, engineering insurance of property**
6. **Insurance professionals and intermediaries**
7. **Basic principles of insurance - utmost good faith - insurable interest - material facts**
8. **Economic principles of - sharing - subrogation - contribution**
9. **Legal principles of insurance**
10. **The Indian contract act 1872 - nomination and assignment**
11. **Financial principles - premium funds - investments**
12. **Agricultural situation in India**
13. **Types of agricultural insurance - scope and practices**
14. **Problems in crop insurance and remedies**
15. **Crop insurance in other countries**
16. **Cattle insurance policy - valuation of cattle loans assessment - settlement of claims**
17. **Mid semester examination**
18. **Poultry insurance - valuation - loss assessment - settlement**
19. **Insurance for sericulture, apiculture**

20. **Insurance for shrimp culture**
21. **Insurance for plantations**
22. **Insurance for bio - gas, pump sets and other miscellaneous insurance**
23. **Basics in risks and uncertainty**
24. **Acceptable risks versus unacceptable risks**
25. **Classification of risks relevant to agri business**
26. **The cost of risks and handling of risk**
27. **The scope and objective of risk management, measurement and adjustment to risk**
28. **Linear programming and marginal analysis**
29. **MOTAD**
30. **Personal risk management**
31. **Risk identification - risk evaluation - statistical methods and probability**
32. **Decision taken under conditions of risks and uncertainty**
33. **Risk avoidance - risk reduction and loss control - insurance - benefits and limitations**
34. **Partial insurance - risk management and corporate objectives**

Course outcome

At the end of the course students will be able to

1. Demonstrate a working knowledge of the procedures associated with risk management.
2. Perform risk management review for individuals and organizations.
3. Evaluate the use of insurance contracts.
4. Understand the scope and objective of risk management
5. Take decisions under risky situation using various risk management techniques.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2	3	2		
CO3	3		3	
CO4				3
CO5		3	2	

Reference books

1. ***Crop Insurance*, 1998. Publication of Insurance Institution of India, Mumbai.**
2. **David, C. and Debertin, 1986. *Agricultural Production Economics*, Mac Millan Publishing Company, New York.**
3. ***General Insurance*, 2004. Publication of United India Insurance Co, Ltd., Chennai.**
4. ***General Insurance*, 2004. Publication of Insurance Institution of India, Mumbai.**
5. **Sankhayan, P.L., 1988. *Introduction to the Economics of Agricultural Production*, Prentice Hall of India, New Delhi.**

ABM 713 E2 Communication for Management and Business (2+0)

Learning Objectives

- **To make the students proficient in written as well as oral communication**
- **To understand business related communication aspects**

Theory

Unit - I : Communication - introduction

Introduction to communication - communication process - barriers to communication - effective communication. Communication in organisations - downward - upward - horizontal - static vs dynamic communication.

Unit - II : Types of communication

Non-verbal communication - communication through clothes / colours / space/ symbol - body language and etiquettes - interpersonal communication - self-concept and communication - assertive communication.

Unit - III : Business writing

Types of business writing - news letters - reports - folders - fact sheets - press release - readership and writing style - human aspects of writing.

Unit - IV : Meetings

Meetings - planning for meeting - tips for chairing, opening - progress and ending - behaviour of ordinary members - the character of business meeting - energies for meetings - group discussions - brain storming sessions and presentations.

Unit - V : Personal communication

Handling personal communication - letters - dictation - reading - problem solving - listening skills - self talk - self reflection - steps to personal creativity - public speaking. Current streams of thought

Theory schedule

1. **Introduction to communication**
2. **Communication process**
3. **Barriers to communication**
4. **Effective communication**
5. **Communication in organizations**
6. **Downward, upward, horizontal, static Vs dynamic communication**
7. **Types of communication - non-verbal communication**
8. **Communication through clothes / colours / space / symbol**
9. **Body language and etiquettes**
10. **Interpersonal communication**
11. **Self-concept and communication**
12. **Assertive communication**
13. **Types of business writing**
14. **News letters, reports**
15. **Folders, fact sheets**
16. **Press release**
17. **Mid semester examination**
18. **Readership and writing style**
19. **Human aspects of writing**
20. **Meetings - planning for meeting**
21. **Tips for chairing, opening, progress and ending**
22. **Behaviour of ordinary members**
23. **The character of business meeting**
24. **Energies for meetings**
25. **Group discussions**
26. **Brain storming sessions**
27. **Presentations**
28. **Handling personal communication**

29. **Letters, dictation, reading, problem solving**
30. **listening skills**
31. **Self-talk**
32. **Self-reflection**
33. **Steps to personal creativity**
34. **Public speaking**

Course outcome

At the end of the course students will be able to

1. Understand the ethical, international, social and professional constraints.
2. Understand the current resources for locating secondary information.
3. Understand the strategies of effective primary data gathering.
4. Develop professional work habits, including those necessary for effective collaboration and cooperation with others.
5. Handle personal communication ways.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			3
CO2	3	2		
CO3		3		3
CO4	3	2	2	
CO5	2			3

Reference books

1. **Bovee, 2008. *Business Communication Today*, 7th Ed., Pearson Edu., New Delhi.**
2. **Brown L., 2006. *Communication Facts and Ideas in Business*, Prentice Hall, New Delhi.**
3. **James O'Brien, 1999. *Management Information System*, Tata McGraw Hill, New Delhi.**
4. **Lesikar, 2004. *Basic Business Communication*, McGraw Hill, New Delhi.**
5. **Ramchandran, K.K., Lakshmi K.K. and K.K. Karthik, 2007. *Business Communication*, MacMillan Publications, New Delhi.**

ABM 713 E3 Management of Agricultural Input Marketing (2+0)

Learning Objectives

- **To impart the students an understanding of different marketing concept**
- **To have a clear understanding of marketing system in context of agricultural inputs**

Theory

Unit-I : Agricultural input marketing

Agricultural input marketing - meaning and importance - management of distribution channels for agricultural input marketing. Agricultural Inputs and their types - farm and non-farm - role of cooperatives, public and private sectors in agricultural input marketing.

Unit-II : Seed marketing

Seed - Importance of seed input - types of seeds - hybrid, high yielding and quality seeds - demand for and supply of seeds - seed marketing channels - pricing - export and import of seeds - role of NSC and State Seed Corporation.

Unit-III : Fertilizer Marketing

Chemical fertilizer - production, export-import - supply of chemical fertilizers, demand/consumption - prices and pricing policy - subsidy on fertilizers - marketing system - marketing channels - problems in distribution - role of public, private and cooperative sector in fertilizer marketing.

Unit-IV : Plant protection chemicals and fuel marketing

Plant protection chemicals - production, export/import - consumption, marketing system - marketing channels - electricity/diesel oil - marketing and distribution system - pricing of electricity for agriculture use - subsidy on electricity.

Unit-V : Farm machinery marketing

Farm machinery - production, supply, demand - marketing and distribution channels of farm machines - agro-industries corporations and marketing of farm machines / implements / equipments. Current streams of thought

Theory schedule

1. **Agricultural input marketing - meaning and importance**
2. **Management of distribution channels for agricultural input marketing**
3. **Agricultural inputs and their types - farm and non-farm inputs**
4. **Role of cooperatives in agri input marketing**
5. **Role of public sectors in agri input marketing**
6. **Role of private sectors in agri input marketing**
7. **Seed - importance of seed input**
8. **Types of seeds - hybrid, high yielding and quality seeds**
9. **Demand for and supply of seeds**
10. **Seed marketing channels**
11. **Pricing of seeds**
12. **Export and import of seeds**
13. **Role of NSC and state seed corporation**
14. **Chemical fertilizers - production**
15. **Export-import of chemical fertilizers**
16. **Supply of chemical fertilizers**
17. **Mid semester examination**
18. **Demand/consumption of fertilizers**
19. **Prices and pricing policy of fertilizers**
20. **Subsidies on fertilizers**
21. **Marketing system - marketing channels**
22. **Problems in distribution of fertilizers**
23. **Role of public, private and cooperative sector in fertilizer marketing**
24. **Plant protection chemicals - production**
25. **Export/import of plant protection chemicals**

26. **Consumption of plant protection chemicals**
27. **Marketing system - marketing channels in PPC**
28. **Electricity/diesel oil - marketing and distribution system**
29. **Pricing of electricity for agriculture use**
30. **Subsidy on electricity**
31. **Farm machinery - production, supply, demand**
32. **Marketing and distribution channels of farm machines**
33. **Agro-industries corporations**
34. **Marketing of farm machines / implements / equipments**

Course outcome

At the end of the course students will be able to

1. Understand the distribution channels of input marketing.
2. Gain the knowledge about seed and fertilizer marketing.
3. Analyse subsidy on fertilizers and problems in its distribution.
4. Understand the pattern of production of plant protection chemicals.
5. Manage distribution channels of farm machinery.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	2		3
CO2	3			2
CO3		3	3	
CO4		2	2	
CO5			2	3

Reference books

1. **Acharya, S.S. and Agarwal N.L., 2004. *Agricultural Marketing in India*, 4th Ed., Oxford and IBH, New Delhi.**
2. **Broadway, A.C. and Broadway Arif A., 2003. *A Text Book of Agri-Business Management*, Kalyani Publishers, New Delhi.**
3. **Singh, A.K. and Pandey S., 2005. *Rural Marketing*, New Age Publishers, New Delhi.**
4. **Singh Sukhpal, 2004. *Rural Marketing- Focus on Agricultural Inputs*, Vikas Publ. House, New Delhi.**
5. **Philip Kotler, 2006. *Principles of Marketing*, Prentice Hall of India, New Delhi.**

ABM 714 E1 International Trade and Sustainability Governance (2+0)

Learning Objective

- **To impart knowledge to the students on international trade in agriculture**
- **To understand various provisions under WTO in the new trade regime**

Theory

Unit-I : WTO and agriculture

International trade - basic concepts - WTO and its implications for Indian economy in general and agriculture sector in particular.

Unit-II : Trade agreements

TRIPS, TRIMS, quotas, anti dumping duties - quantitative and qualitative restrictions - tariff and non-tariff measures - trade liberalization - subsidies - green and red boxes - issues for negotiations in future in WTO - CDMs and carbon trade.

Unit-III : Foreign trade

Importance of foreign trade for developing economy - absolute and comparative advantage - foreign trade of India.

Unit-IV : Foreign trade policy

Composition of India's foreign trade policy - India's balance of payments - inter regional Vs international trade - tariffs and trade control - exchange rates - the foreign trade multiplier.

Unit-V : Export procedures

Foreign demand - supply side analysis - opportunity cost - trade and factor prices - implications for developing countries - market entry methods - export procedures and documentations. Current streams of thought

Theory schedule

1. **International trade - basic concepts**
2. **WTO and its implications for Indian economy in general**
3. **Impact of WTO on agriculture sector**
4. **TRIPS**
5. **TRIMS**
6. **Quotas - anti dumping duties**
7. **Quantitative restrictions on trade**
8. **Qualitative restrictions on trade**
9. **Tariff measures**
10. **Non-tariff measures**
11. **Trade liberalization**
12. **Subsidies in trade**
13. **Green and red boxes**
14. **Issues for negotiations in future in WTO**
15. **CDMs and carbon trade**
16. **Importance of foreign trade for developing economy**
17. **Mid semester examination**
18. **Absolute and comparative advantage**
19. **Foreign trade of India**
20. **Composition of India's foreign trade policy**
21. **India's balance of payments**
22. **Inter regional Vs international trade**
23. **Tariffs and trade control**
24. **Exchange rates**
25. **The foreign trade multiplier**
26. **Foreign demand**
27. **Supply side analysis**
28. **Opportunity cost**
29. **Trade prices**
30. **Factor prices**

31. **Implications for developing countries**
32. **Market entry methods**
33. **Export procedures**
34. **Documentations**

Course outcome

At the end of the course students will be able to

1. Understand basic concepts of international trade.
2. Compare the relationship between trade, investment and economic growth
3. Identify empirical tests of trade models.
4. Analyse foreign trade policy related to agri business sector.
5. Understand export procedure and way to improve the share of agri in total export.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3			2
CO2	3	3		
CO3		2		3
CO4	3	2		
CO5			2	3

Reference books

1. **Aran Goyal, and Moor Mohamed, 2001. *WTO in the New Millennium*, Academy of Business Studies, New Delhi.**
2. **Chadha, G.K., 2003. *WTO and Indian Economy*, Deep and Deep, New Delhi.**
3. **Francis Cherunilam, 2006. *International Trade and Export management*, Himalaya Publishing House, Mumbai.**
4. **Jhingam, J.L., 2002. *International Economics*, Vrinda Publications, New Delhi.**
5. **Vasisht, A.K. and Singh Alka., 2003. *WTO and New International Trade Regime-Implication for Indian Agriculture*, Advance Publ. Concept.**

ABM 714 E2 Commodity Futures Trading (2+0)

Learning Objectives

- **To provide a basic understanding on the mechanics and value of futures markets for speculators and hedgers**
- **To understand price risk management activities of agribusiness firms**

Theory

Unit-I : Commodity markets

History and evolution of commodity markets - terms and concept - spot, forward and futures markets - factors influencing spot and future markets. Speculatory mechanism in commodity futures.

Unit-II : Trading strategies

Transaction and settlement - delivery mechanism - role of different agents - trading strategies - potential impact of interest rate. Foreign exchange - FDI in commodity markets.

Unit-III : Risks in commodity trading

Risks in commodity trading - importance and need for risk management measures - managing market price risk - hedging, speculation, arbitrage, swaps - pricing and their features.

Unit-IV : Commodity exchanger

Importance of global and Indian commodity exchanges - contracts traded - special features - regulation of Indian commodity exchanges - FMC and its role.

Unit-V : Technical analysis

Fundamental Vs technical analysis - construction and interpretation of charts and chart patterns for analyzing the market trend - market indicators - back testing. Introduction to technical analysis software - analyzing trading pattern of different commodity groups. Current streams of thought

Theory schedule

1. **History and evolution of commodity markets**
2. **Terms and concept**
3. **Spot markets**
4. **Forward and future markets**
5. **Factors influencing spot markets**
6. **Factors influencing future markets**
7. **Speculatory mechanism in commodity futures**
8. **Transaction and settlement**
9. **Delivery mechanism**
10. **Role of different agents in trading**
11. **Trading strategies**
12. **Potential impact of interest rate**
13. **Foreign exchange**
14. **FDI in commodity markets**
15. **Risks in commodity trading**
16. **Importance and need for risk management measures**
17. **Mid semester examination**
18. **Managing market price risk**
19. **Hedging, speculation**
20. **Arbitrage, swaps**
21. **Pricing and their features**
22. **Importance of global commodity exchanges**
23. **Importance of Indian commodity exchanges**
24. **Contracts traded**
25. **Special features**
26. **Regulation of Indian commodity exchanges**
27. **FMC and its role**

28. **Fundamental Vs technical analysis**
29. **Construction and interpretation of charts**
30. **Chart patterns for analyzing the market trend**
31. **Market indicators**
32. **Back testing**
33. **Introduction to technical analysis software**
34. **Analyzing trading pattern of different commodity groups**

Course outcome

At the end of the course students will be able to

1. Understand the speculator mechanism of commodity markets.
2. Gain the knowledge about trading strategies.
3. Manage market price under risks.
4. Understand the importance of global and Indian commodity exchange.
5. Do technical analysis of trading pattern of commodity groups.

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	3	3		3
CO2	3			
CO3		2		3
CO4		2		2
CO5	2	3		

Reference books

1. **Kaufman, P.J., 1986.** ***The Concise Handbook of Futures Markets*****, John Wiley and Sons, New Delhi.**
2. **Leuthold, R.M., Junkus J.C. and Cordier J.E., 1989.** ***The Theory and Practice of Futures Markets*****, Lexington Books, London.**
3. **Lofton, T., 1983.** ***Getting Started in Futures*****, 3rd Ed., John Wiley and Sons, New Delhi.**
4. **Purcell, W.D., 1991.** ***Agricultural Futures and Options: Principles and Strategies*****, Macmillan Publishing, New Delhi.**
5. **Wasendorf, R.R. and Mc Cafferty, 1993.** ***All about Commodities from the Inside Out*****, McGraw-Hill, New Delhi.**

ABM 714 E3 Capital and Commodity Markets (2+0)

Learning Objective

- **To enable the students to acquire an overview of the different aspects of capital and commodity trading**
- **To teach the fundamentals and other factors related to capital market instruments and commodities as well as their prices**

Theory

Unit-I : Introduction to capital markets

The basic investment portfolio theory and models - stock exchange and stock trading regulator, securities, participants issue of shares - Initial Public Offering (IPO) and FPO - foreign capital issuance - introduction to secondary markets - products in secondary markets.

Unit-II : Debt investments

Debt investments - derivatives, depository, corporate actions. Index - its calculations, clearing, settlement and redressal, concepts and modes of analysis - ratio analysis.

Unit-III : Introduction to commodity markets

History and evolution of commodity markets - spot, forward and futures market - options, derivative markets - managing market price risk. Hedging, speculation, arbitrage, swaps - concepts of open interest, close out - mark to market practice - margins and its types, strategies using options to hedge risks.

Unit-IV : Commodity exchange regulation

Important global and Indian commodity exchanges - regulation of Indian commodity exchanges - sources of commodity market information - Forward Market Commission (FMC) and its role - Multi Commodity Exchange (MCX) - National Multi Commodity Exchange (NMCE) - National Commodity and Derivatives Exchange Limited (NCDEX) - Risk in commodity trading - importance and need for risk management measures.

Unit-V : Fundamental and technical analysis

Fundamental analysis - demand and supply, trade volume of capital market instruments and commodities - technical analysis - chart reading - candle stick charts (Doji, Marbozu, Hammer) - pie charts, line charts, bar charts, histogram, moving averages, exponential, simple weighted average. Current streams of thought

Theory schedule

1. **The basic investment portfolio theory**
2. **The basic investment models**
3. **Stock exchange and stock trading regulator, securities, participants issue of shares**
4. **Initial Public Offering (IPO) and FPO**
5. **Foreign capital issuance**
6. **Introduction to secondary markets**
7. **Products in secondary markets**
8. **Debt investments**
9. **Derivatives, depository, corporate actions, index - its calculations, clearing, settlement and redressal**
10. **Concepts and modes of analysis**
11. **Ratio analysis**
12. **History and evolution of commodity markets**
13. **Spot, forward and futures market**
14. **Options, derivative markets, managing market price risk**
15. **Hedging, speculation, arbitrage, swaps**
16. **Concepts of open interest, close out**
17. **Mid semester examination**
18. **Mark to market practice**
19. **Margins and its types**

20. **Strategies using options to hedge risks.**
21. **Important global and Indian commodity exchanges**
22. **Regulation of Indian commodity exchanges**
23. **Sources of commodity market information**
24. **Forward Market Commission (FMC) and its role**
25. **Multi Commodity Exchange (MCX)**
26. **National Multi Commodity Exchange (NMCE)**
27. **National Commodity and Derivatives Exchange Limited (NCDEX)**
28. **Risk in commodity trading**
29. **Importance and need for risk management measures**
30. **Fundamental Analysis of demand and supply**
31. **Trade volume of capital market instruments and commodities**
32. **Technical analysis chart reading, candle stick charts (Doji, Marbozu, Hammer)**
33. **Pie charts, line charts, bar charts**
34. **Histogram, moving averages, exponential, simple weighted average**

Course outcome

At the end of the course students will be able to

1. Understand the fundamentals of capital and commodity markets.
2. Gain knowledge about debt investment.
3. Manage market price risk in commodity market.
4. Manag commodity exchange understanding risk in trade.
5. Analyse capital market technically using different tools..

CO –PO MAPPING

	PO1	PO2	PO3	PO4
CO1	2			3
CO2		3		2
CO3		2		3
CO4	3			
CO5	3			3

Reference books

1. **Carter, Colin A., 2003. *Futures and Options Market: An Introduction*, Prentice-Hall: Upper Saddle River, New Jersey.**
2. **Hull, John C., 2005. *Fundamentals of Futures and Options Markets*, 5th Edition. Prentice Hall: Upper Saddle River, New Jersey.**
3. **McDonald, Robert L., 2006. *Derivatives Markets*, 2nd Edition, Addison Wesley: Boston.**
4. **Wayne Purcell and Stephen Koontz., 1999. *Agricultural Futures and Options, Principles and Strategies* (2nd Edition), Prentice-Hall, New Delhi.**
5. **Wasendorf, R.R., and Mc Cafferty, 1993. *All about Commodities from the Inside Out*, McGraw-Hill, New Delhi.**
6. **www.ncdex.com**
7. **www.moneycontrol.com**
8. **www.commodityonline.com**

SUPPORTING COURSES

STA 613 Statistics for Business Management (2+1)

Learning Objective

- **To make the students conversant about the applications of statistics in agri business analysis**
- **To understand various methods of analysis and interpretation**

Theory

Unit - I: Sampling and data collection

Business statistics - definition - scope - functions - limitations - applications. Basic concepts - unit and frame, population and sample - sampling and complete enumeration - probability and non-probability sampling - sampling and non-sampling errors - measurement and control of non-sampling errors. Simple random sampling (SRS) - with and without replacement - Systematic sampling - Stratified random sampling - stratification - cluster sampling - determination of sample size. Collection of data - primary and secondary - methods of collection - drafting questionnaire - sources of data - editing - classification and tabulation of data - diagrammatic and graphical representation.

Unit - II: Theories of distributions

Measures of central value - measures of dispersion - methods of studying variation. Distributions - binomial distribution - poisson distribution - normal distribution - their applications.

Unit - III: Correlation and regression

Simple correlation - meaning - assumptions - positive and negative correlation - scatter diagram - computation of correlation coefficient - properties, testing and interpretation of correlation coefficient - coefficient of determination. Regression theory - simple linear regression - meaning, assumptions - fitting of simple linear regression - properties of regression coefficients - interpretation of regression coefficients and intercept. Multiple linear regression - assumptions - standardized and partial regression coefficients - fitting of multiple linear regression equation - interpretation of regression coefficients - multiple correlation - coefficient of multiple determination (R^2) - interpretation.

Unit - IV: Tests of significance

Test of significance - basic ideas - Type I error, Type II error - test of significance based on small sample - 't' test - testing the significance of single mean - testing the significance of two means for independent samples and paired samples. Large sample tests - testing the significance single mean, two means. Test for regression coefficient - Chi square - test for homogeneity of variance. Goodness of fit tests - 'F' test- one way ANOVA and two way ANOVA.

Unit - V: Nonparametric tests and time series models

Non parametric tests (Distribution free tests) - advantages - disadvantages - run test - test for randomness - median test - sign test - Mann Whitney U test for two samples - Kolmogrov - Smirnov one sample and two sample test, Kruskal - Walli's test - Chi-square. Introduction to time series models - AR - MA - ARMA models - forecasting using SPSS.

Practical

Simple random sample - selection - estimation - determination of sample size in simple random sampling. Systematic sampling - stratified random sampling - cluster sampling - selection - estimation. Frequency distribution - graphical representation - measures of central values - measures of dispersions - applications of binomial distribution - poisson distribution and normal distribution - problems in correlation and regression analysis - partial correlation - multiple correlation and multiple regression. Rank correlation coefficient. Tests of significance for small and large samples and problems - non parametric test - time series analysis - AR, MA and ARMA

Models - Forecasting using SPSS - LIMDEP

Theory schedule

1. **Business statistics - definition - scope - functions - limitations - applications**
2. **Basic concepts - unit and frame, population and sample - sampling and complete enumeration**
3. **Probability and non-probability sampling - sampling and non-sampling errors - measurement and control of non-sampling errors**
4. **Simple random sampling (SRS) - with and without replacement**
5. **Systematic sampling - Stratified random sampling - stratification - cluster sampling - determination of sample size**
6. **Collection of data - primary and secondary**
7. **Methods of collection - drafting questionnaire**
8. **Sources of data - editing - classification and tabulation of data**
9. **Diagrammatic and graphical representation**
10. **Measures of central value**
11. **Measures of dispersion**
12. **Methods of studying variation**
13. **Binomial distribution - poisson distribution**
14. **Normal distribution - their applications**
15. **Simple correlation - meaning - assumptions - positive and negative correlation**
16. **Mid semester examinations**
17. **Scatter diagram - computation of correlation coefficient**
18. **Properties, testing and interpretation of correlation coefficient**
19. **Coefficient of determination**
20. **Regression theory - simple linear regression - meaning, assumptions**
21. **Fitting of simple linear regression - properties of regression coefficients**
22. **Interpretation of regression coefficients and intercept**
23. **Multiple linear regression - assumptions - standardized and partial regression coefficients**
24. **Fitting of multiple linear regression equation - interpretation of regression coefficients**
25. **Multiple correlation - coefficient of multiple determination (R^2) - interpretation**
26. **Test of significance - basic ideas - Type I error, Type II error - test of significance based on small sample - 't' test - testing the significance of single mean**
27. **Testing the significance of two means for independent samples and paired samples**
28. **Large sample tests - testing the significance single mean, two means**
29. **Test for regression coefficient - Chi square - test for homogeneity of variance**
30. **Goodness of fit tests - 'F' test- one way ANOVA and two way ANOVA**
31. **Non-parametric tests (Distribution/free/tests) - advantages - disadvantages**
32. **Run test - test for randomness - median test - sign test**
33. **Mann - Whitney U test for two samples - Kolmogrov - Smirnov one sample and two sample test, Kruskal - Walli's test - chi-square**
34. **Introduction to time series models - AR - MA - ARMA models - forecasting using SPSS.**

Practical schedule

1. **Simple random sample - selection - estimation**
2. **Determination of sample size in simple random sampling**
3. **Systematic sampling - stratified random sampling**
4. **Cluster sampling - selection - estimation**
5. **Frequency distribution - graphical representation**
6. **Measures of central values measures of dispersions**
7. **Applications of binomial distribution**
8. **Poisson distribution and normal distribution**
9. **Problems in correlation and regression analysis**
10. **Partial correlation**

11. **Multiple correlation and multiple regression**
12. **Rank correlation coefficient**
13. **Tests of significance for small and large samples and problems**
14. **Non-parametric tests**
15. **Time series analysis - AR, MA and ARMA Models**
16. **Forecasting using SPSS**
17. **LIMDEP**

Course Outcomes

At the end of the course students will be able to

1. Understand the different sampling methods and its importance.
2. Fitting the regression and correlation analyses and test the significance
3. Know the time series analysis and other non-parametric tests
4. Know the interpretation of regression coefficients
5. Understand the t test and significance level

PO –CO MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	-	-	-	2	3
CO 2	-	-	-	2	2
CO 3	-	-	-	2	3
CO 4	-	-	2	3	3
CO 5	-	-	2	3	3

Reference books

1. **Agarwal, B.M., 1995. *Basic Statistics*, New Age International Ltd, New Delhi.**
2. **Gupta, S.C. and V.K. Kapoor, 2004. *Fundamentals of Statistics*, Sultan Chand and Sons, New Delhi.**
3. **Priestly, M.B., 1981. *Spectral Analysis and Time Series*, Academic Press, New Delhi.**
4. **Rangasamy, R., 1990. *A Text Book on Agricultural Statistics*, New Age India Ltd, Chennai.**
5. **Senthamarai Kannan, K. and D. Venkatesan, 2005. *Introduction to Statistical Methods*, Scitech Publications (India) Private Ltd., Chennai.**

COM 611 – COMPUTER APPLICATIONS FOR AGRICULTURAL RESEARCH (1 + 1)

Learning Objectives

1.To understand the basics of Computer and to gain abundant knowledge in information technology.

2.To know how to use office automation tools to increase personal and academic productivity.

3.To get exposed to aspects of internet usage and to propagate the awareness of research facilities using browsing and searching.

Theory

Unit – I Introduction to Computer

Overview of Computers - Devices of a Computer and their functions - Classification of Computers - Hardware – Software – Classification of Software - Operating System – Dos – Windows – Unix - VIRUS – Current trends in Hardware and Software.

Unit –II Word Processor & Spread Sheet Applications

MS-Word – Word Processing and Components of Word Ribbon - Creating, Editing and Printing of a document – Features of word like Page setting, Font, Paragraph, Table, Clip arts, Text box, Spell check, Grammar check - Mail Merge concepts. MS-Excel – Ribbon Components - Spread sheet - Creating a simple formula and Aggregate function - Preparation of charts – Applying Conditional formula - Use of Data Analysis tools.

Unit – III Database & Presentation

MS-Access – Creation of database, storing and retrieval - Table form – Adding records – SQL Query – using GUI to design printing layout - Report generation. MS–PowerPoint – Slide preparation – Components of PowerPoint Ribbon – Adding slides with different layouts – Design, Custom Animation and Transition effects.

Unit – IV Internet, Webpage Design & Networks

Introduction to Internet – Service providers - Web browser – Search engines – Internet applications – Cyber Security – Types of Web Pages – HTML webpage design – Usage of script language – Introduction to Computer Networks- Topologies – Network device - Current trends in Networks & Internet.

Unit – V Agricultural Statistical Software

SAS, MSTAT, IRRISTAT, AGRES, AGRISTAT, STATISTICA, MANOVA, MANCOVA AND SPSS.

Theory Schedule

1.Introduction to Computers, Anatomy of Computers.

2.Input and Output devices, Units of memory, Hardware, Software and Classification of Computers.

3.Software, Categories of software, Operating System, Types of operating system.

4.Booting sequence of operating system, DOS, Windows, Unix, VIRUS.

5.Word Processer and their components of ribbon.

6.Creating, Editing and printing a document, Features of word Table creation,Insert menu option.

7.Creation of spread sheet and their ribbon components.

8.Creating different types of graphs and working procedure of Aggregate function and data analysis.

9.Concepts of Database, Creating Database.

10.Mid semester Examination

11.Creation, Storing and retrieval of data from database and report generation.

12PowerPoint preparation, Different layouts, Design Custom Animation and Transition effects.

13.Introduction to Internet and its applications

14.Types of WebPages, Service providers, Web browser and Search engines
15.HTML and usage of script language.
16.Introduction to Networks Concepts.
17.SAS, MSTAT, IRRISTAT and AGRISTAT.
18.MANOVA, MANCOVA and SPSS.

Practical schedule

1. Introduction to Hardware, Software and Operating System.
2. Study of Dos and Unix Commands.
3. MS-Word – Create, Edit and Print a document and Ribbon features.
4. MS-Word – Formatting, Inserting, Table creation and Alignment.
5. MS-Word – Creating a Mail Merge.
6. MS–Excel – Inbuilt Functions, Chart preparations.
7. MS-Excel – Prepare Student mark sheet with Aggregate and draw chart.
8. MS–Excel – Prepare Employee payroll with Income tax and draw chart.
9. MS-Excel – Statistical Function and Data analysis tools.
10. MS-Access – Database Creation.
11. MS-Access – Insert, Update and Delete data from the database.
12. MS-Access – Query Execution and Report generation.
13. Webpage creation using basic HTML tags.
14. Webpage creation with Hyperlink and Images.
15. Email – Compose, Attaching, Browsing a webpage .
16. IRRISTAT, AGRESS
17. SPSS – Median, Mode Standard Deviation and Correlation.
18. SPSS – Regression for Linear and Non linear.
19. **Model Practical Examination**.

Course Outcomes

1. Understand the difference between an operating system and application program, and what each is used for in a computer
2. Performing common basic functions like editing, formatting, printing, scanning etc using tools.
3. Ability to sort data, manipulate data using formulas and Statistical function and Data analysis tools .
4. Understanding methods and tools to design, implement in web pages and develop Web Application.
5. Gain expertise on application of spss

CO - PO MAPPING

	PO 1	PO 2	PO3	PO 4	PO5
CO 1	-	-	-	1	1
CO 2	-	-	-	2	2
CO 3	-	-	-	2	2
CO 4	-	-	-	1	1
CO 5	-	-	-	2	2

Reference

1. Mathew Leon and Alexis Leon, 2008. Introduction to Computers, Vikas Publishing House.
2. Katherine Murray, Suzanne Weixel, and Faithe Wempen, 2011. Learning Microsoft Office 2010 Advanced Skills, Pearson Education/Prentice Hall.
3. Mathew Leon and Alexis Leon, 2012. Internet for Everyone, Vikas Publishing House.

4. Behrouz A FoRouzen, 2003. Data communication and Networking, Tata McGraw Hill Publishing Company Limited, New Delhi.
5. Thomas Powell, 2010. HTML and CSS: the Complete Reference, Fifth Edition, Tata McGraw Hill Publishing Company Limited, New Delhi.

NON CREDIT COMPULSARY COURSES

PGS 611 Research Data Analysis (0+1)

Learning Objectives

- **To explain the usage of various statistical packages**
- **To understand the analysis of agricultural research data**
- **To provide the students hands on experience in the analysis of research data**

Practical

Statistical data analysis using MS Excel – creation and usage of excel spread sheet. Descriptive statistics - cross tabulation - one way, two way and multi-way tables - chi square test for socio economic conditions - comparison of means - student's t test - comparing a single mean - comparison of two means - paired and independent t tests - one way ANOVA. F test for testing the equality of variances - correlation coefficient - simple linear regression analysis - multiple linear regression analysis. Mann Whitney U-test - Wilcoxon matched pairs signed rank test - Kruskal Wallis one -way analysis - Friedman two-way analysis – Spearman's rank correlation - Kendall's rank correlation - time series analysis - moving average - exponential smoothing.

Course Outcomes

At the end of the course students will be able to

1. Use various statistical packages.
2. Identify the variables and models.
3. Interpret the results.

CO – PO MAPPING

	PO1	PO2	PO3	PO4	PO5
CO1		2		2	3
CO2	2	2			1
CO3			3	2	2

Reference books

1. **Darren George and Paul Mallery, 2007. *SPSS for Windows Step by Step - A simple guide and reference*, Pearson Education, New Delhi.**
2. **Leland Wilkinson, Grant Blank and Christian Gruber, 1996. *Desktop Data Analysis with Systat*, Prentice Hall, New Jersey.**
3. **Ramesh Babu and Samyuktha, 2003. *Computer Practice - I*, V.R.B. Publications, New Delhi.**
4. **Saxena, 2003. *A first course in Computers*, Vikas Publishing House (P) Ltd., New Delhi.**
5. **Sharma, K.V.S., 2010. *Statistics Made Simple: Do it yourself on PC*, Prentice Hall of India, New Delhi.**

PGS 612: TECHNICAL WRITING AND COMMUNICATION SKILLS (0+1)

Learning Objective

- To equip the students with skills *Viz.,* writing of dissertations, research papers, etc. and to communicate and articulate in English

Practical

Grammar - Tenses, parts of speech, clauses, punctuation marks; Error analysis - Common errors; Concord; Collocation; Phonetic symbols and transcription; Accentual pattern: Weak forms in connected speech: Participation in group discussion: Facing an interview; presentation of scientific papers. Proof reading.

Technical Writing - Various forms of scientific writings- theses, technical papers, reviews, manuals, etc; Structure of thesis and research communications (title page, authorship contents page, preface, introduction, review of literature, material and methods, experimental results and discussion); Writing of abstracts, summaries, précis, citations etc.; commonly used abbreviations in the theses and research communications; illustrations, photographs and drawings with suitable captions; pagination, numbering of tables and illustrations; Writing of numbers and dates in scientific write-ups; Editing and proof-reading; Writing of a review article.

Practical schedule

1. Grammar (Tenses, parts of speech)
2. Grammar (clauses, punctuation marks)
3. Error analysis (Common errors); Concord; Collocation;
4. Phonetic symbols and transcription;
5. Accentual pattern: Weak forms in connected speech
6. Participation in group discussion
7. Facing an interview; presentation of scientific papers.
8. Technical Writing- Various forms of scientific writings- theses, technical papers
9. Mid -semester
10. Technical Writing- reviews, manuals
11. Structure of thesis and research communications
12. Writing of abstracts, summaries, précis, citations etc
13. Commonly used abbreviations in the theses and research communications
14. Illustrations, photographs and drawings with suitable captions
15. Pagination, numbering of tables and illustration, numbers and dates in scientific write-ups
16. Editing and proof-reading
17. Writing of a review article.

COURSE OUTCOMES:

At the end of the course, the students will obtain:

CO1-Proficiency in the English language to express their views and ideas without any hindrance

CO2-Competency in communication both written and oral

CO3- Fluency in the English language.

CO4-Word power to use the English language effectively.

CO–PO Mapping

	PO1	PO2	PO3	PO4	PO5
CO1	-	-	-	1	1
CO2	-	-	-	2	2
CO3	-	-	-	2	3
CO4	-	-	1	2	3

Suggested Readings

1. Joseph G. 2000. MLA Handbook for Writers of Research Papers. 5th Ed. Affiliated East-West Press.
2. Mohan K. 2005. Speaking English Effectively. MacMillan India.
3. Richard WS. 1969. Technical Writing. Barnes & Noble.
4. Robert C. (Ed.). 2005. Spoken English: Flourish Your Language. Abhishek.
5. Wren PC & Martin H. 2006. High School English Grammar and Composition. S.Chand & Co.

PGS 623 Basic Analytical Techniques (0+1)

Learning Objective

- **To provide the use of the statistical package**
- **To analyse agricultural research data**
- **To write interpretation**

Practical

Use of SPSS / equivalent for frequency distribution, summarization and tabulation of data, F test, correlation, pearson correlation, spaearman correlation, ANOVA, ANCOVA. For regression: simple, multiple linear regression, estimation of regression by OLS and MLE method, logit, probit, stepwise regression, coefficient of determination. For Kolmogorov - Smirnov test, Wilcoxon signed rank test, Mann-Whitney U, Kruskal-Wallis, McNemar's test. For discriminant analysis - fitting of discriminant functions, identification of important variables, factor analysis, principal component analysis - obtaining principal component. For analysis of time series data - AR, MA, ARIMA models.

Practical schedule

1. **Use of SPSS / equivalent for frequency distribution**
2. **Summarization and tabulation of data**
3. **F test**
4. **Correlation, pearson correlation, spearman correlation**
5. **ANOVA, ANCOVA**
6. **Regression - simple, multiple linear regression, estimation of regression by OLS and MLE method**
7. **Logit, probit, stepwise regression**
8. **Coefficient of determination**
9. **Kolmogorov - Smirnov test**
10. **Wilcoxon signed rank test, Mann - Whitney U test**
11. **Kruskal - Wallis, McNemar's test**
12. **Discriminant analysis**
13. **Fitting of discriminant functions**
14. **Identification of important variables**
15. **Factor analysis. Principal component analysis**
16. **Obtaining principal component**
17. **Time series data AR, MA, ARIMA models**

Course Outcomes

At the end of the course students will be able to

1. Identify the methods to collect data.
2. Do different econometric analysis.
3. Forecast economic variables using AR,MA, and ARIMA models.

CO – PO MAPPING

	PO1	PO2	PO3	PO4	PO5
CO1	2			2	
CO2		2	1		3
CO3				2	3

Reference books

1. **SPSS User's guide and User's manual.**
2. **Wetherill, G.B., 1982. Elementary Statistical Methods. Chapman & Hall.**
3. **Wetherill, G.B., 1986. Regression Analysis with Applications. Chapman & Hall.**
4. **Learning statistics: http://freestatistics.altervista.org/en/learning.php.**
5. **Free statistical software's: http://freestatistics.altervista.org/en/stat.php.**
6. **Statistics glossary http://www.cas.lancs.ac.uk/glossary_v1.1/main.html**

PGS 624: LIBRARY AND INFORMATION SERVICES 0+1

Learning Objective

- To equip the library users with skills to trace information from libraries efficiently, to apprise them of information and knowledge resources, to carry out literature survey, to formulate information search strategies, and to use modern tools (Internet, OPAC, search engines etc.) of information search.

PRACTICAL

Introduction to library and its services; Role of libraries in education, research and technology transfer; Classification systems and organization of library; Sources of information- Primary -Sources, Secondary Sources and Tertiary Sources; Intricacies of abstracting and indexing services - (Science Citation Index, Biological Abstracts, Chemical Abstracts, CABI Abstracts, etc.); Tracing - information from reference sources; Literature survey; Citation techniques/Preparation of bibliography; Use of CD-ROM Databases, Online Public Access Catalogue and other computerized - library services; Use of Internet including search engines and its resources; e-resources access methods.

PRACTICAL SCHEDULE

1. Introduction to library and its services
2. Role of libraries in education, research and technology transfer;
3. Classification systems and organization of library
4. Sources of information- Primary –Sources
5. Sources of information -Secondary Sources and Tertiary Sources
6. Intricacies of abstracting and indexing services
7. Science Citation Index, Biological Abstracts, Chemical Abstracts, CABI Abstracts, etc.);
8. Tracing - information from reference sources; Literature survey
9. Mid- Semester
10. Citation techniques/Preparation of bibliography;
11. Use of CD-ROM Databases,
12. Online Public Access Catalogue and other computerized - library services
13. Online Public Access Catalogue and other computerized - library services
14. Use of Internet including search engines and its resources
15. Use of Internet including search engines and its resources
16. e-resources access methods.
17. e-resources access methods.

Course outcomes:

1. To equip the library users with skills to trace information from libraries efficiently,
2. To apprise them of information and knowledge resources,
3. To carry out literature survey, to formulate information search strategies, and

4. To use modern tools (Internet, OPAC, search engines etc.) of information search.

PO-CO MAPPING

	PO1	PO2	PO3	PO4	PO5
CO1				2	2
CO2		1		3	1
CO3	1			2	2
CO4			1	2	3

PGS 715 Intellectual Property and its Management in Agriculture (1+0) (e-course)

LearningObjectives

- To create awareness about intellectual property rights in agriculture
- To explain management of patents, trademark, geographical indications, copy rights, designs, plant variety protection and biodiversity protection
- To understand marketing and commercialization of intellectual properties

THEORY

Unit - I: World trade organization - introduction

World Trade Organization - Agreement on Agriculture (AoA) and Intellectual Property Rights (IPR) - importance of intellectual property management - IPR and economic growth - IPR and bio diversity - major areas of concern in intellectual property management - technology transfer and commercialization - forms of different intellectual properties generated by agricultural research.

Unit - II: Patent document

Discovery *versus* invention - patentability of biological inventions - procedure for patent protection - preparatory work - record keeping, writing a patent document, filing the patent document - types of patent application - patent application under the Patent Cooperation Treaty (PCT).

Unit - III: Plant genetic resources

Plant genetic resources - importance and conservation - sui generic system - plant varieties protection and farmers' rights act - registration of extinct varieties - registration and protection of new varieties / hybrids / essentially derived varieties - dispute prevention and settlement - farmers' rights.

Unit - IV: Trademark

Trademark - geographical indications of goods and commodities - copy rights-designs - biodiversity protection.

Unit - V: Benefit sharing

Procedures for commercialization of technology - valuation, costs and pricing of technology - licensing and implementation of intellectual properties - procedures for commercialization - exclusive and non exclusive marketing rights - research exemption and benefit sharing.

THEORY SCHEDULE

1. World Trade Organization - Agreement on Agriculture (AoA) and Intellectual Property Rights (IPR)
2. Importance of intellectual property management - IPR and economic growth - IPR and bio diversity
3. Major areas of concern in Intellectual property management - technology transfer and commercialization
4. Forms of different intellectual properties generated by agricultural research
5. Discovery versus invention patentability of biological inventions
6. Procedure for patent protection
7. Preparatory work - record keeping, writing a patent document, filing the patent document
8. Types of patent application - patent application under the Patent Cooperation Treaty (PCT)
9. **Mid semester examination**

10. Plant genetic resources - importance and conservation
11. Sui generic system - plant varieties protection and farmers' rights act - registration of extant varieties
12. Registration and protection of new varieties / hybrids / essentially derived varieties - dispute prevention and settlement - farmers' rights
13. Trade mark - geographical indications of goods and commodities - copy rights - designs
14. Biodiversity protection
15. Procedures for commercialization of technology - valuation, costs and pricing of technology
16. Licensing and implementation of intellectual properties - procedures for commercialization
17. Exclusive and non exclusive marketing rights - research exemption and benefit sharing

Course Outcomes

CO1: Understand the concepts in international trade.
CO2: Understand the procedure to obtain patent rights.
CO3: Know the way to protect extinct varieties.
CO4: Create awareness about geographical indications of goods and commodities.
CO5: Identify the way to commercialize intellectual properties.

CO – PO Mapping

	PO1	PO2	PO3	PO4	PO5
CO1					
CO2					
CO3					1
CO4		1	1	1	1
CO5	1	1	1	1	1

References

1. Arun Goyal and Moor Mohamed, 2001. *WTO in the New Millennium*, Academy of Business Studies, New Delhi.
2. BilekDebroy, 2004. *Intellectual Property Rights*, BR World of books, New Delhi.
3. Ganguli, P., 2001. *Intellectual Property Rights - Unleashing the KnowledgeEconomy*, Tata McGraw Hill, New Delhi.
4. Narayanan, R., 2006. *Patent Law*, Eastern Law House, New Delhi.
5. Ramappa, T., 2000. *Intellectual Property Rights under WTO - Tasks before India*, Wheeler Publishing, New Delhi.

PGS 716 DISASTER MANAGEMENT (1+ 0) (e-Course)

Learning Objectives:

- Students will learn key concepts and types of natural disaster
- Students will acquire knowledge about climate change and its impact
- Students will understand about man made disaster and disaster response mechanisms in India
- Students will equip on disaster warning response and preparedness
- Students will acquire knowledge about climate resilient agriculture

THEORY

Unit I – Natural disaster

Natural Disasters - meaning and nature of natural disasters, their types and effects. Floods, drought, cyclone, earthquakes, landslides, avalanches, volcanic eruptions, heat and cold waves.

Unit II – Climate change

Climatic change - Global warming, sea level rise, ozone depletion, Manmade disasters - Nuclear disasters, chemical disasters, biological disasters.

Unit III – Man – made disaster

Building fire, coal fire, forest fire, oil fire, air pollution, water pollution, deforestation, industrial waste water pollution, disaster management- efforts to mitigate natural disasters at national and global levels – India's key hazards, vulnerabilities and disaster response mechanisms in India.

Unit IV – Disaster warning, response and preparedness

Concept of disaster management, national disaster management framework; financial arrangements, role of NGOs, community-based organizations, and media - central, state, district and local administration. Dissemination of disaster warning, response to natural disasters, national, state, district level, relief – food and nutrition – water – health – mental health services.

Unit V – Rehabilitation

Rehabilitation – food - clothing - utensils - fuel – shelter – relief camp – sanitation and hygiene.Resilent farming concepts – reclamation and revival of the agriculture system after natural disaster (Bio-shield). Preparedness – Emergency Operations Centres (EOCS).

THEORY LECTURE SCHEDULE

1. Natural Disaster - meaning and nature of natural disasters, their types and effects.
2. Flood, drought, cyclone, earthquakes landslides, avalanches, volcanic eruptions, Heat and cold waves.
3. Climatic change- Global warming, sea level rise, ozone depletion
4. Manmade disaster - Nuclear disasters, chemical disasters, biological disasters.
5. Building fire, coal fire, forest fire. oil fire.
6. Air pollution, water pollution, deforestation, industrial wastewater pollution.
7. Disaster management- efforts to mitigate natural disasters at national and global levels.
8. India's key hazards, vulnerabilities and disaster response mechanism in India.
9. **Mid-Semester examination**
10. Concept of disaster management, national disaster management framework.
11. Financial arrangements, roleof NGOs, community-based organizations and media.

12. Central, state, district and local administration.
13. Dissemination of disaster warning - response to natural disasters, national, state, district level.
14. Relief – food and nutrition – water – health – mental health services.
15. Rehabilitation – tolerant and resistant crops- resilient farming concepts – bioshields - livelihood options – insurance and compensation.
16. Disaster preparedness - clothing and utensils and fuel – shelter – relief camp – sanitation and hygiene.
17. Preparedness – Emergency Operations Centers (EOCS).

Course Outcomes:

CO 1: To learn different types of natural disasters

CO 2: To understand climate change, global warming and their mitigation

CO 3: To gain knowledge about disaster management and understand the importance of afforestation

CO 4: To acquire knowledge about disaster warnings

CO 5: To understand the importance of climate smart agriculture

CO– PO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5
CO1					
CO2					
CO3					1
CO4	1	1		1	
CO5	1		1		

References

1. Gautam, D R. 2009. *Community based disaster risk reduction*. Mercy Corps, Lalitpur, Nepal.
2. Gupta, HK. 2003. *Disaster management*. Indian National Science Academy. Orient Blackswan.
3. Hodgkinson, PE and Stewart, M. 1991. *Coping with Catastrophe: A handbook of disaster management*.Routledge.
4. Ministry of Home Affairs. 2010.*Standard operating procedure for responding to natural disasters,*Ministry of Home Affairs – Disaster management Division, New Delhi.
5. Sharma,VK.2001. *Disaster management*. National Centre for Disaster Management, India.
6. Das, H.P. 2016. *Climate change and agriculture implications for global food security*. BS Publications, Hyderabad.
7. Kelkar, R.R. 2010. *Climate change -A Holistic view*. BS Publications, Hyderabad.

e resources

1. http:// research.un.org/en/disaste
2. https://searchworks.stanford.edu/
3. http://guodes.litrary.illinois.edu>c.php
4. http:// libguides. auu.edu.au>c.php
5. www.wcpt.org

PGS 717 Constitution of India (1+0)

Learning Objectives:

- The main aim of this course is to make the students to understand the history of making of the Indian Constitution.
- This course will enable the students to know the philosophy of the Indian Constitution.
- This course will make the students to understand the nature of Indian Federalism, about the powers and functions of the President and Prime Minister of India.
- This course aims to sensitize the students on the administrative setup at the centre, state and local level.

Theory

Unit - I

Meaning of the Constitution law and Constitutionalism -Historical Perspective of the Constitution of India -Salient features and Characteristics of the Constitution of India.

Unit - II

Scheme of the Fundamental Rights. The scheme of the Fundamental Duties and its legal status. The Directive Principles of State Policy – Its importance and implementation.

Unit - III

Federal structure and distribution of legislative and financial powers between the union and the States-Parliamentary form of Government in India. The Constitution powers and status of the President of India. Amendment of the Constitutional Powers and Procedure.

Unit - IV

The Historical perspectives of the constitutional amendments in India. Emergency Provision: National Emergency, President Rule, Financial Emergency. Local Self-Government – Constitutional Scheme in India.

Unit - V

Scheme of the Fundamental Right to Equality. Scheme of the Fundamental Rights to certain Freedom under Article 19. Scope of the Right to life and Personal Liberty under Article 21.

Theory Lecture Schedule

1. Meaning of the Constitution law and Constitutionalism.
2. Historical Perspective of the Constitution of India.
3. Salient features and Characteristics of the Constitution of India.
4. Scheme of the Fundamental Rights.
5. The scheme of the Fundamental Duties and its legal status.
6. The Directive Principles of State Policy – Its importance and implementation.
7. Federal structure and distribution of legislative and financial powers between the union and the States.
8. Parliamentary form of Government in India
9. Mid- Semester Examination
10. The Constitution powers and status of the President of India.
11. Amendment of the Constitutional Powers and Procedure.
12. The Historical perspectives of the constitutional amendments in India.
13. Emergency Provision: National Emergency, President Rule, Financial Emergency.
14. Local Self-Government – Constitutional Scheme in India.
15. Scheme of the Fundamental Right to Equality.
16. Scheme of the Fundamental Rights to certain Freedom under Article 19.
17. Scope of the Right to life and Personal Liberty under Article 21.

Course Outcome:

CO 1: Understanding the history of making of the Indian Constitution

CO 2: Understanding the philosophy of the Indian Constitution.

CO 3: Understanding the nature of Indian Federalism, about the powers and functions of the President and Prime Minister of India.

CO 4: Make the students abreast of the administrative setup at the centre, state and local level.

CO –PO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5
CO1	-	-	-	-	-
CO2	-	1	-	-	-
CO3	1	1	-	1	1
CO4	2	-	1	1	2

References:

1. Bipan Chandra, Mridula Mukherjee and Adility Mukherjee, 2016. **India after Independence 1947-2000**, Penguin Publishers New Delhi.
2. Durga Das Basu, 2018. **Introduction to the Constitution of India**. Prentice Hall New Delhi.
3. Granvila Austin, 2006. **The Indian Constitution: Cornerstone of a Nation**, New Delhi, Oxford University.
4. Paul R. Brass, 1999. **The Politics of India Since Independence**. Cambridge New Delhi:
5. Yogendra Yadav (ed.,) 2000. **Transforming India: Social Dynamics of Democracy**: New Delhi, Oxford University

Proforma-1

PROFORMA FOR FORMATION OF RESEARCH ADVISORY COMMITTEE

(To be sent before the end of I Semester)

1. Name of the student :

2. Enrolment number: Reg. No. :

3. Degree :

4. Course :

5. Advisory Committee :

S.No.	Advisory Committee	Name, Designation and Department	Signature
1.	Chairperson		
2.	Members		
	Additional Member		
	Reasons for additional Member		

Signature of Professor and Head

Additional members may be included only in the allied faculty related to thesis research with full justification at the time of sending proposals (Program of research).

Proforma-1a.

PROFORMA FOR CHANGE IN THE RESEARCH ADVISORY COMMITTEE

1. Name of the student :
2. Enrolment number: Reg. No.
3. Course :
4. Degree :
5. Proposed Change :

Advisory Committee	Name and designation	Signature
a. Existing member		
b. Proposed member		

6. Reasons for change

Chairperson

Signature of Professor and Head

Proforma-2

PROFORMA FOR OUTLINE OF RESEARCH WORK (ORW)

(To be sent before the end of I Semester)

1. Name :
2. Enrolment number: Reg. No.
3. Degree :
4. Course :
5. Date of Joining :
6. Title of the research project :
7. Objectives :
8. Duration :
9. Review of work done :
10. Broad outline of work/methodology :
11. Semester wise break up of work :

Signature of student

Approval of the advisory committee

Advisory committee	Name	Signature
Chairperson		
Members		
1.		
2.		

Professor and Head

Proforma-2a

PROFORMA FOR CHANGE IN OUTLINE OF RESEARCH WORK (ORW)

1. Name :

2. Enrolment number: Reg. No

3 Degree :

4 Course

5 Reasons for change :

6 Proposed change in the approved Program of research :

7 Number of credits completed so far Under the approved program :

8 a. Whether already earned credits are to be retained or to be deleted :

b. if retained, justification :

Signature of the student

Approval of the Advisory Committee

Advisory committee	Name	Signature
Chairperson		
Members		

Professor and Head

Proforma 3

DEPARTMENT OF ----------
PROFORMA FOR EVALUATION OF SEMINAR

1. Name of the candidate :
2. Register Number :
3. Degree programme :
4. Semester :
5. Topic of the seminar and credit :

6 . Distribution of marks

Distribution of marks	Max Marks					
i. Literature coverage	40					
ii. Presentation	30					
iii. Use of audio – visual aid	10					
iv. Interactive skills	20					
Total	100					
Name						
Designation		H.O.D	Chairperson	Member 1	Member 2	Average
Signature						

Grade point

Head of the Department

Proforma-4

PROFORMA FOR REGISTRATION OF RESEARCH CREDITS

(To be given during first week of semester)

PART A: PROGRAM

Semester: Year: Date of registration:

1. Name of the student and
2. Enrolment number : Reg. No.:
3. Total research credits completed so far:
4. Research credits registered during the semester:
5. Program of work for this semester (list out the Items of research work to be undertaken during the semester) :

Approval of advisory committee

Advisory committee	**Name**	**Signature**
Chairperson		
Members		
1		
2		

Professor and Head

Approval may be accorded within 10 days of registration

Proforma-5

PROFORMA FOR EVALUATION OF RESEARCH CREDITS

PART B EVALUATION

(Evaluation to be done before the closure of Semester)

Date of Commencement semester : Date of closure of semester:

Date of evaluation :

1. Name of the student

2. Enrolment number : Reg. No .:

3. Total research credits completed so far:

4. Research credits registered during the semester:

5. Whether the research work has been carried out as per the approved program :

6. If there is deviation specify the reasons :

7. Performance of the candidate : SATISFACTORY /NOT SATISFACTORY

Approval of the advisory committee

Advisory committee	**Name**	**Signature**
Chairperson		
Members		

Professor and Head

Proforma-6

PROFORMA FOR THE PROPOSAL OF QUALIFYING EXAMINATION

1. Name of the student:
2. Enrolment number: Reg. No.:
3. Degree:
4. Course:
5. Whether all major courses have been completed:
6. No. of credits completed:
7. Whether he/she has an overall GPA of above 6.5:
8. Title of thesis:
9. Panel of external examiners:
10. Remarks:

Signature of Chairman with
Name and designation

Professor and Head

Proforma-7

PROFORMA FOR COMMUNICATION OF RESULTS OF QUALIFYING EXAMINATION

1. Name of the student:
2. Enrolment number: Reg. No.:
3. Degree:
4. Course:
5. Department :
6. Date of examination:
7. Result (Successful / not Successful*):
8. Remarks:

   (*) to be written by the external examiner

Examination committee	Name	Signature
Chairperson		
Members		
External Examiner		

Professor and Head

Note if this is the re-exam the date of previous examination may be indicated

Proforma-8

ANNAMALAI UNIVERSITY
FACULTY OF AGRICULTURE
DEPARTMENT OF AGRICULTURAL ECONOMICS
PROFORMA FOR EVALUATION OF THESIS

1. Name of the examiner:
2. Postal Address:
3. Telephone/Mobile:
4. E-Mail:
5. Name of the candidate :
6. Title of the thesis:
7. Date of receipt of the thesis copy:
8. Date of dispatch of the detailed report and thesis by the examiner to the Controller of Examinations:
9. Examiner's recommendations choosing one of the following based on quality of thesis

Please give your specific recommendation (select any one decision from the list below) with your signature and enclose your detailed report in separate sheet(s).

a. I recommend that the thesis entitled ----------

--submitted by ---------- be accepted for award of the Degree of MASTER OF SCIENCE (AGRICULTURE) of Annamalai University, Annamalainagar.

(OR)

b. I do not recommend the acceptance of the thesis entitled.

---------- submitted by ----------for award of the Degree of MASTER OF SCIENCE (AGRICULTURE) of Annamalai University, Annamalainagar. (Please specify reasons)

Date :

Signature with Office Seal:

Note: Please enclose a detailed report in duplicate duly signed by you giving the merits and demerits of the thesis on the choice of problem, review of literature, methods followed, results and discussion, etc.

Proforma- 9

PROFORMA FOR REPORT OF THE FINAL VIVA VOCE EXAMINATION

The meeting of the Examining Committee for Mr./Ms. ---------- M.Sc.(Ag.)./(Hort.)/M.B.A(Agri Business) Student Reg. .No. ---------- majoring in ---------- ----------was held at ----------a.m/p.m on ----------

The following members were present:

1. ---------- : Chairperson
2. ---------- : Members
3. ----------

The committee took note of the report of the external examiner Dr. ----------recommending the thesis for acceptance.

The final viva voce examination for the candidate was conducted by the members of the Advisory Committee. The performance of the candidates was Satisfactory/ Not Satisfactory.
The Committee recommends/ does not recommend unanimously the award of Degree of M.Sc.(Ag.)./(Hort.)/M.B.A(Agri Business) to Mr./Ms.----------

1. Chairperson
2. Member
3. Member

The original report from the External Examiner is attached herewith

Chairperson of the Advisory Committee

Professor and Head

Proforma- 10

CERTIFICATE FOR HAVING CARRIED OUT THE SUGGESTIONS OF THE EXTERNAL EXAMINER AND ADVISORY COMMITTEE

Certified that Mr./ Ms. ---------- Reg. No. ----------has carried out all the corrections and suggestions as pointed out by the External examiner and the Advisory Committee. He/She has submitted **TWO** copies of his/ M.Sc.(Ag.)./(Hort.)/M.B.A(Agri Business) thesis in hard bound cover and two soft copies in CD format, two copies each of the abstract of thesis and summary of the findings both in Tamil and English in CD format.

Chairperson

Professor and Head

Proforma- 11

ANNAMALAI UNIVERSITY

FACULTY OF AGRICULTURE

DEPARTMENT OF AGRICULTURAL ECONOMICS

CERTIFICATE

This is to certify that the thesis entitled "----------" submitted in partial fulfillment of the requirements for the award of the degree of **----------** to Annamalai University, Annamalainagar is a record of bonafide research work carried out by ----------, under my guidance and supervision and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has been published / not been published in part or full in any scientific or popular journals or magazines.

Chairperson

1. Member
2. Member