Course Structure for
M.Sc. (Ag.) Agriculture Extension
under Semester System to come into force from
Academic Session 2013-14.

M.Sc. (Agriculture)
AGRICULTURE EXTENSION
(SEMESTER-WISE)
M.Sc. (Ag.) – AGRICULTURE EXTENSION

In the area of Agricultural Extension an effort has been made to retain relevant core concepts and principles of Extension and Agricultural Extension as such. However, new topics and also new courses have been added to infuse new blood in the area.

- All the courses have been designed/redesigned/updated as per present and future needs.
- New courses have been introduced to keep pace with the latest developments.
- In order to help the students, Course objectives and Suggested readings have also been provided for each course.
- List of Journals have been provided to keep pace with latest developments in the area.
- Suggested Areas of Research have also been added for providing directions to future researches in the area

This programme also requires proper infrastructure, trained teachers, and computers with internet connections. Industrial linkages, guest lectures, industry and farm visits will also be required to provide real life exposure.
M.Sc. (Ag.) – Agriculture Extension

COURSE STRUCTURE – AT A GLANCE

<table>
<thead>
<tr>
<th>FIRST SEMESTER</th>
<th>M.M.: 500</th>
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<tbody>
<tr>
<td>PAPER – 101  FUNDAMENTALS OF EXTENSION EDUCATION</td>
<td>100 Marks</td>
</tr>
<tr>
<td>PAPER – 102  DEVELOPMENT COMMUNICATION AND MEDIA</td>
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<tr>
<td>PAPER – 103  ADOPTION AND DIFFUSION OF INNOVATIONS</td>
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<td>PAPER – 104  RURAL SOCIOLOGY AND PSYCHOLOGICAL FACTORS IN RURAL DEVELOPMENT</td>
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<td>PAPER – 105  PRACTICAL</td>
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M.Sc. (Ag.) — Agriculture Extension

COURSE STRUCTURE — AT A GLANCE

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<tr>
<td>PAPER – 201</td>
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<td>e-EXTENSION AND INFORMATION SYSTEM</td>
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<td>PAPER – 202</td>
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<tr>
<td>FUNDAMENTALS OF EXTENSION MANAGEMENT</td>
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<tr>
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<td>TRAINING FOR EFFECTIVE HUMAN RESOURCE DEVELOPMENT</td>
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<td>PAPER – 204</td>
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<tr>
<td>METHODS FOR TECHNOLOGY DEVELOPMENT &amp; TRANSFER</td>
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<tr>
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# M.Sc. (Ag.) – Agriculture Extension

## COURSE STRUCTURE – AT A GLANCE

### THIRD SEMESTER

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<td>STATISTICAL METHODS FOR EXTENSION EDUCATION</td>
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<td>PAPER – 302</td>
<td>RESEARCH METHODS IN SOCIAL SCIENCES</td>
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<td>PAPER – 303</td>
<td>MARKET-LED EXTENSION AND ENTREPRENEURSHIP</td>
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<td>PAPER – 304</td>
<td>MONITORING, EVALUATION AND IMPACT</td>
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# M.Sc. (Ag.) – Agriculture Extension

## COURSE STRUCTURE – AT A GLANCE

### FOURTH SEMESTER

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<td>Advanced Agriculture Extension Management Techniques</td>
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<td>402</td>
<td>Gender Sensitization for Development</td>
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<td>403</td>
<td>Seminar</td>
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<td>Research (Thesis and Viva-Voce)</td>
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M.M.: 500

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# M. Sc. Ag. Examination in Agriculture Extension

## PROPOSED REGULATIONS

<table>
<thead>
<tr>
<th>Semesters/Papers</th>
<th>Title of the papers</th>
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<tr>
<td>Paper 101</td>
<td>Fundamentals of Extension Education</td>
<td>100</td>
<td>40</td>
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<tr>
<td>Paper 102</td>
<td>Development Communication and Media Management</td>
<td>100</td>
<td>40</td>
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<td>Paper 103</td>
<td>Adoption and Diffusion of Innovations</td>
<td>100</td>
<td>40</td>
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<td>Paper 104</td>
<td>Rural Sociological and Psychological Issues in Rural Development</td>
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<td>40</td>
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<td>Paper 105</td>
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<td><strong>SEMESTER II</strong></td>
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<tr>
<td>Paper 201</td>
<td>e-Extension and Information System</td>
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<td>Paper 202</td>
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<tr>
<td>Paper 203</td>
<td>Training For Effective Human Resource Development</td>
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<td>Paper 204</td>
<td>Methods For Technology Development &amp; Transfer</td>
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<td>Paper 301</td>
<td>Statistical Methods For Extension Education</td>
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<td>Research Methods in Social Sciences</td>
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<td>Paper 404</td>
<td>THESIS (Thesis and Viva-Voce)</td>
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Consolidate Performa for allotments of all semester are as follows:-

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**Note:**

1. The research work may be initiated in any of II or III semester but the thesis shall be submitted at the end of IV semester.
2. The evaluation of seminar presentation shall be done by the departmental committees.
M.Sc. (AG.) AGRICULTURE EXTENSION

FIRST SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 101
FUNDAMENTALS OF EXTENSION EDUCATION

Objective:-
The course is intended to orient the students with the concept of extension education and its importance in Agriculture development and also to expose the students with various Rural development programmes aimed at poverty alleviation and to increase employment opportunities and their analysis. Besides, the students will be learning about the new innovations being brought into the Agricultural Extension in India.

UNIT I
Extension Education – Origin, Concept, Meaning, objectives, principles and philosophy, critical analysis of definitions – Extension Education as a Profession – Adult Education and Distance Education.
Conceptual and philosophical similarities and dissimilarities among extension education, adult education and distance education. Earlier extension efforts and their implications for India’s future development programmes.

Extension System in India: First Line Extension Education System–ICAR, TOT projects of ICAR - National Demonstration, Krishi Vigyan Kendra, Lab to Land Programme, Operational Research Project, Role of ICAR in transfer of technology : National Agriculture Technology Project (NATP), National Agriculture Innovation Project (NAIP),
Trainers’ Training Center (TTC), Training and Visit System (T&V). Comparative analysis of agricultural extension approaches of USA, Japan, UK, China and Israel. Privatization of extension services.

UNIT II
Pioneering Extension efforts and their implications in Indian Agricultural Extension – Analysis of Extension systems of ICAR and SAU – State Departments Extension Systems and NGOs – Role of Extension in Agricultural Development.
Growth of National Agriculture Research System in India.
Poverty Alleviation Programmes – Community Development Programme, National Extension Service, Community Development Block, Panchayati Raj Institutions, SGSY, SGRY, PMGSY, Employment Generation Programmes – NREGP, RLEGP, JRY, IRDP, TRYSEM, HADP, TADP.
Women Development Programmes – DWCRA, ICDS, MSY, RMK, Problems in Rural Development.

UNIT III
Extension teaching: Concept, Meaning, Definitions, Principles, Characteristics, Nature, Steps and factors influencing teaching process, Elements of steps of Teaching,

UNIT IV
Current Approaches in Extension:
Decentralized Decision Making, Bottom up Planning, Farming System Approach, Farming Situation Based Extension, Market – Led – Extension, Farm Field School, ATIC, Kisan Call
Centres. Privatization of extension service and implication of World Trade Organization for Extension Service.

Practical
Visit to Gram Panchayat to study on-going Rural Development Programmes, Visit to KVK, NGO and Extension centers of ICAR, State Agricultural University and State Departments, Bottom up planning, Prepare a community/village development project. Study of organizational set up & functioning of State Agriculture Departments. Study of indigenous technical know-how about agricultural practices prevalent in rural areas.

Suggested Readings


M.Sc. (AG.) AGRICULTURE EXTENSION

FIRST SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 102
DEVELOPMENT COMMUNICATION AND MEDIA MANAGEMENT

Objective:-
In this course, students will learn about the concept, meaning and process of communication and various methods and modern media of communication. Besides, the students will also learn the information management and journalistic writing of various information materials and also study their readability.

UNIT I
Basic concept in Communication: Meaning, nature, scope and importance of communication in Agriculture and Rural Development, key elements of communication, feedback in communication, communication models, problems of communication in Agriculture. Other necessary elements of communication: Encoding, Decoding, Interpretation, communication effectiveness and credibility, Communication Loss, Communication Noise. Communication Model: Meaning and types of Model, Models of Communication. Barriers in communication. Message – Meaning, dimensions of a message, characteristics of a good message, Message treatment and effectiveness, distortion of message.

UNIT II
Media Management – Introduction, Definition, Principles and Significance of Management. Media Ownership patterns in India – Proprietorship,

**UNIT III**


**Electronic Media** – Role and Importance of Radio -History, Radio Role in TOT, writing and presentation techniques, Different Programmes of Farm Broadcast, developing content for farm broadcast, Role of FM Radio in Agriculture, **Ethics of Broadcasting**, Broadcasting Policy and code. **Community Radio** – Concept, meaning, role in TOT, Cases of Community radio. Techniques of writing scripts for Radio.

**Television** – History - Role in TOT , Fundamentals of Television Production, Techniques of Script writing for TV, Visual Thinking, language & Style, Farm Telecast programmes, cable and satellite TV and their impact, Cassette Technology – Role in TOT, Techniques of
production of cassettes for the farming community. Traditional Media – Role of Folk Media in TOT and integration with electronic media. Techniques of writing scripts for TV.

UNIT IV


**Photo Journalism** : Meaning, Definitions, scope, Importance of photo journalism in journalism. Principle of Photo Editing, Precautions in taken the Photos. Communicating with pictures, Film processing, picture layout.

**Electronic Imaging:** Digital photography, Photographing with digital cameras and its controls, capturing digital images using scanners and Digital Image Processing, Controlling brightness and contrast; Colour controls -using hue, saturation and variations;

**Output:** intricacies of printing digital images, Computer printing and photographic paper printing;
Preparation of lecture slides - content limitation and layout; its utility in preparing presentations for research papers and other publications; Applications: In Agriculture, Scientific Photography, Communication, Scientific presentation and Extension work.
Practical:
Identification of key communicators in the villages. Exercise in oral, written communication and group discussion. Exercise on Writing for Print Media – Writing News / Success Stories / Feature articles for different topics related to Agriculture & allied fields. Exercise of editing & proof reading the Farm News for News papers – different types of intro and leads. Exercise of Writing for Radio, TV, Preparation of story board for farm Video Production – Script writing for Radio and T.V. Visit to media management organizations for studying the principles, procedures and processes in managing the media. Participation and Interaction through video conference. Developing communication & Media Strategy for selected developmental programme/activity. Organizing Agricultural Publicity Programmes, such as exhibitions, farmers fairs, film shows etc. in rural areas. Writing of leaflets, bulletins, news letters to the news papers, news stories, etc., Practicing of Photo journalism - Preparation and developing of Photographs in the photographic Lab. Preparation of photo album of farm events. Using Digital Camera and learning to use its functions. Creating photographic set-ups to suit different scientific samples. Image corrections and enhancement with image editing software. Use of Photographs in presentation slides – maintaining aspect ratio, content limitation and layout.

Suggested Readings


• Longford, Michael 1986. Basic Photography, Focal Press

• Longford, Michael 1989. Advanced Pictography, Focal Press


M.Sc. (AG.) AGRICULTURE EXTENSION

FIRST SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 103
ADOPTION AND DIFFUSION OF INNOVATIONS

Objective:-
The students will learn how the agricultural innovations spread among the farmers in the society by getting into the insights of diffusion concept and adoption process, stages of adoption and innovation decision process, adopter categories and their characteristics, opinion leaders and their characteristics, attributes of innovations, and factors influencing adoption. In addition, the students would be learning various concepts related to diffusion and adoption of innovations.

UNIT I

Adoption process: Meaning, Definitions, stages of Adoption, Factors affecting adoption process,

Diffusion Process: Meaning, Definitions, Main elements, innovation decision process, Stages of innovation decision process, a critical appraisal of the new formulation. Role of change agents in diffusion and adoption.

UNIT II

Adopter categories – Innovativeness and adopter categories, adopter categories as ideal types, characteristics of adopter categories; Perceived attributes of Innovation and their rate of adoption, factors influencing rate of adoption.
UNIT III

The generation of innovations: The innovation development process, tracing the innovation development process, converting research into practice; The adoption process: The concept and stages, shades of agreement. The neglected element – the need, dynamic nature of stages, covert and overt processes at stages, the innovation-decision process – a critical appraisal of the new formulation; Decision making – meaning, theories, process, steps, factors influencing decision – making.

UNIT IV

Diffusion effect and concept of over adoption, opinion leadership- measurement and characteristics of opinion leaders, multi-step flow of innovation; concepts of homophile and heterophony and their influence on flow of innovations; Types of Innovation-decisions – Optional, Collective and Authority and contingent innovation decisions; Consequences of Innovation-Decisions – Desirable or Undesirable, direct or indirect, anticipated or unanticipated consequences; Decision making – meaning, theories, process, steps, factors influencing decision – making.

Practical

Case studies in individual and community adoption process, content analysis of adoption studies, Identification of adopter categories on a selected technology, study of attributes of current farm technologies, Identification of opinion leaders, Sources of information at different stages of adoption on a selected technology, identifying factors responsible for adoption and non- adoption of innovations, presentation of reports on adoption and diffusion of innovations.

Suggested Readings


M.Sc. (Ag.) Agriculture Extension

First Semester
Course Contents – Detailed Syllabus

Paper – 104
Rural Sociological and Psychological Issues in Rural Development

Unit I

Unit II

Rural Leadership: concept and Meaning of leadership, Attributes of a leader, Types of leadership, Functions of rural leader, Meaning and Characteristics of traditional rural leadership, Emerging pattern of rural leadership, Traditional and contemporary leadership – a comparison.

Unit III
Psychological Factors in Agricultural Development: Psychology, Social Psychology and Educational Psychology: Meaning, Definitions, Object, Scope and Importance.

Social Interaction, Attitudes, Emotions and Values: Meaning, Definitions, Object, Types, Scope and Importance.

Motivation: Meaning, Definitions, Types, Theories, Scope and Importance in extension education.


**UNIT IV**

**Group Dynamics:** Group nature and characteristics, group structure, group influence on behaviour, group polarization, group think, de-individuation and crowded behaviour, group leadership.

**PRACTICALS:**

- A detailed survey of socio-economic and cultural aspects of the village and submission of the report.
- Holding different types of group discussions and meeting, practice in public speaking;
- Study of C.D. Organizations, training institute and rural development institute.
- Prepare a community/village development project.
- Preparation and use of different socio-psychological scales.
- Conducting case studies on different socio-psychological aspects.
- Study of structure & functioning of selected self-help groups (SHG’s)
- Factors influencing the success/failure of SHG’s.
- Role of cooperative societies in rural development.
M.Sc. (AG.) Agriculture Extension

First Semester
Course Contents – Detailed Syllabus

Paper – 105
Practical
M.Sc. (AG.) AGRICULTURE EXTENSION

SECOND SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 201
e-EXTENSION AND INFORMATION SYSTEM

Objective:-
Students will gain knowledge and skills in understanding the concepts of Information and communication technologies and how these ICT tools can be used for Agricultural Extension. Besides, he studies various ICT projects which are successful in delivering the services to the clientele fulfilling the objective of Transfer of Technology i.e. reaching the un-reached.

UNIT I
Information and Communication Technologies (ICTs)- Concept, definition, tools and application in extension education. Reorganizing the extension efforts using ICTs, advantages, limitations and opportunities.

UNIT II
ICT (Information communication technology): Introduction, Empowering the rural people, Role of ICT in rural development, ICTs projects, case studies in India and developing world. Different approaches (models) to ICTs. ICT use in field of extension- Expert systems on selected crops and enterprises; Self learning CDs on package of practices, diseases and pest management, Agricultural web sites and portals related crop production and marketing etc.

UNIT III


UNIT IV

Information System: Concept and meaning of the Information System. Types of Information System, Challenges of Info-Revolution in future,

Practical

Suggested Readings

Objective:-
The first part of the course is intended to provide overall picture of planning and development of enterprises for extending sustainable livelihoods for rural people. The second part of the course is structured to help the students to gain knowledge and skills in different concepts and techniques of management in extension organizations.

Unit I:
Principle of Extension Management

1. **Management** – Meaning, concept, nature and importance, Approaches to management, Types, Making planning effective. Change Management – factors, process and procedures.

   **Extension Management:** Concept, Definitions, Objectives, Scope and Principles of Extension Management. Levels of management, Qualities and skills of a manager.

2. **Functions of Extension Management** : Planning, Organization of an Extension Services; Interpersonal relations in the organization, Managerial problems of Agricultural Extension Organizations, **Co-ordination**– Concept, Need, Types. **Staffing** – Need and importance, Manpower planning, Recruitment, Selection, Placement and Orientation, Training and Development, Performance appraisal, meaning, concept and methods, **Leading**– Concept, Characteristics, Functions, Approaches to leadership, Leadership styles., **Controlling**– concept, Nature,

Supervision – Meaning, Responsibilities, Qualities and functions of supervision, Essentials of effective supervision. Managerial Control Budgeting, Observation, PERT and CPM, MIS.

Unit II:
Decision making – Concept, Types of decisions, Styles and techniques of decision making, steps, tools and limitations, Guidelines for making effective decisions.

Organizing – Meaning of Organization, Concept, basic elements, process and methods in organization. Principles, Organizational Structure, types of organizational structures, Span of Management, line and staff organization, Centralization and Departmentalization, Authority and responsibility, Delegation and decentralization, line and staff relations. Groups and committees, characteristics of organizational groups, team building and conflict management, Budgeting, purpose, types of budgets, budgeting process. Auditing, internal and external, Problems of agricultural management in India, Organizational climate- concept and ways to improve climate of development organisations, Recent advances in management of agricultural research and development organisations;

Unit III:
Extension Administration, Co-Ordination and Supervision:

2. **Coordination**: Meaning, Need of coordination, Techniques of Coordination
Important Aspects of Coordination, Factors Influencing Co-ordination.

3. **Supervision**: Definition, Objectives, Principle of supervision, Characteristics of
skilled extension supervisor, Limitations of supervision:

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**UNIT IV**

**Programme planning for effective Management;**

1. **Programme Planning**: Concept, importance, principles, basic elements and steps of Programme planning. Importance, principles and processes of developing sound extension programme. Programme developments as a social action process. Types of plans. Role of planning commission. Formulation of five year plans. Role of Panchayats in planning. Planning – various tools and techniques for planning, planning for future, system approach to the planning process,

2. **Need**: Types of Need, Methods of ascertaining the Felt Needs, Need assessment techniques like Participatory Rural Appraisal and CONA (Community Oriented Need Assessment), Planning techniques i.e. PERT and CPM. **Programme evaluation**— meaning, objectives, principles, types, steps, techniques and criteria. Critical analysis of various extension programmes for agricultural and rural development in India since independence including reorganized agricultural extension system. PEO and its functions

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**PRACTICAL**

- Field visit to extension organizations to understand the functions of management.
- Field visit to successful enterprises - study of characteristics of successful entrepreneurs. Development of project proposal. Case studies of success / failure enterprises.
• Exercise on Market Survey. Field visit to financial institutions simulated exercise to understand management process. Traditional Medias prevalent in rural areas and their role of in TOT and its integration with electronic media. Selection of various aids and identification of various extension teaching methods.
• Group exercise on development of short term and long term plan. Simulated exercise on techniques of decision making. Designing organizational structure.
• Group activity on leadership development skills.

Suggested Readings

M.Sc. (AG.) AGRICULTURE EXTENSION

SECOND SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 203
TRAINING FOR EFFECTIVE HUMAN RESOURCE DEVELOPMENT

Objective:-
To orient the students about key concepts Importance, scope & conceptual frame work, growth & development of Human Resource Development, Subsystems of Human Resource Development for extension organization and process of HRD.

UNIT I

Training and Education: Concept, meaning and relationship.

Principles of Training: Meaning and definitions, Objectives, Need, Nature, Importance, Principles and Types of training. Facilities for training. Comparative study of education and training, Farmers training, Suggestions to make effective the farmer’s training centres. Role of Training in agriculture and extension management. Factors affecting training,

Methods of Training: their importance and classifications. Lecture, Group discussion, Seminar, Symposium, Workshop, Syndicate method, Panel discussion, Colloquium method, Case study method, Brain storming method, Buzz session, Role playing,

Participatory training methods, Problems in Training: Training Modules for extension personnel, farmers, farm women and youth empowerment, Training modules for Krishi Vigyan Kendras, and SAU/ICAR staff, Trainers’ training, Training Evaluation and follow up – methods and strategy.
UNIT II

Evaluation of training: Why evaluation, Levels of evaluation, Groups control evaluation, Objective of evaluation, When to evaluate.

Research studies in training extension personnel; Main issues in HRD: HRD culture and climate – organizing for HRD – emerging trends and Prospective. PADI (the peoples action for development in India), Role of Farmer’s training centres in agriculture development,

UNIT III

Human Resource Development – Definition, Meaning, Importance, selection, performance appraisal, working climate, changing roles etc.; Scope and Need for HRD; Conceptual frame work, inter disciplinary approach, function systems and case studies in HRD; HRD Interventions – Different Experiences; Selection, Development & Growth-Selection, Recruitment, Induction Staff Training and Development, Career planning; Social and Organizational Culture: Indian environment perspective on cultural process and social structure, society in transition; Organizational and Managerial values and ethics, organizational commitment ; Motivation productivity - job description – analysis and evaluation; Performance Appraisal. Human Resource management: Collective bargaining, Negotiation skills; Human Resource Accounting (HRA Training structures and facilities available for human resource development. Visit to training institutions for sharing experiences. Research studies on training of extension.

UNIT IV

communication and Feedback and interpersonal styles; Group & Inter group process: group information and group processes; Organizational communication, Team building Process and functioning, Conflict management, Collaboration and Competition; HRD & Supervisors: Task Analysis; Capacity Building – Counseling and Mentoring; Role of a Professional Manager: Task of Professional Manager – Responsibility of Professional Manager; Managerial skills and Soft Stills required for Extension workers; Decision Making: Decision Making models, Management by Objectives; Behavioural Dynamics: Leadership styles – Group dynamics.

Practical
Development of training module, Organization & evaluation training programme. Visit to different training organizations to review on going activities & facilities; Analysis of Training methods followed by training institutions for farmers and extension workers Studies on evaluation of training programmes; Study of HRD in organization in terms of performance, organizational development, employees welfare and improving quality of work life and Human resource information, Presentation of reports.

Suggested Readings


**Objective:-**

This course is intended to orient the students with the key concepts, principles process of different participatory approaches for technology development and transfer and also to expose the students with various participatory tools and techniques like space related, time related, and relation oriented methods. Besides the students will be learning the preparation of action plans participatory monitoring and evaluation.

**UNIT I**


**UNIT II**
 Participatory extension – Importance, key features, principles and process of participatory approaches; Different participatory approaches (RRA, PRA, PLA, AEA, PALM, PAR, PAME, ESRE, FPR) and successful models.

UNIT III
Participatory tools and techniques. Space Related Methods: village map (social & resource), mobility services and opportunities map and transect; Time related methods: time line, trend analysis, seasonal diagram. Daily activity schedule, dream map; Relation oriented methods: cause and effect diagram (problem tree), impact – diagram, well being ranking method, Venn diagram, matrix ranking, livelihood analysis.

UNIT IV
Preparation of action plans, concept and action plan preparation; Participatory technology development and dissemination; Participatory planning and management, phases and steps in planning and implementation aspects; Process monitoring, participatory evaluation.

Practical
Simulated exercises on space related methods; time related method and relation oriented methods; Documentation of PTD and dissemination; Preparation of action plan; Participatory monitoring and evaluation of developmental programmes.

Suggested Readings

M.Sc. (AG.) AGRICULTURE EXTENSION

SECOND SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 205
PRACTICAL
M.Sc. (AG.) AGRICULTURE EXTENSION

THIRD SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 301
STATISTICAL METHODS FOR EXTENSION EDUCATION

Objective:-
This course lays the foundation of probability distributions and sampling distributions and their application which forms the basis of Statistical Inference. Together with probability theory, this course is fundamental to the discipline of Statistics. The students are also exposed to correlation and regression, and order statistics and their distributions. Categorical data analysis is also covered in this course.

UNIT I
Descriptive statistics: probability distributions: Discrete probability distributions ~ Bernoulli, Binomial, Poisson, Negative-binomial, Geometric and Hyper Geometric, uniform, multinomial ~ Properties of these distributions and real life examples. Continuous probability distributions ~ rectangular, exponential, Cauchy, normal, gamma, beta of two kinds, Weibull, lognormal, logistic, Pareto. Properties of these distributions. Probability distributions of functions of random variables.

UNIT II
Concepts of compound, truncated and mixture distributions (definitions and examples). Pearsonian curves and its various types. Sampling distributions of sample mean and sample variance from Normal population, central and non–central chi-Square, $t$ and $F$ distributions, their properties and inter relationships.
UNIT III

UNIT IV

UNIT V
Order statistics, distribution of r-th order statistics, joint distribution of several order statistics and their functions, marginal distributions of order statistics, distribution of range, median, etc.

Practical
Fitting of discrete distributions and test for goodness of fit; Fitting of continuous distributions and test for goodness of fit; Fitting of truncated distribution; Computation of simple, multiple and partial correlation coefficient, correlation ratio and intra-class correlation; Regression coefficients and regression equations; Fitting of Pearsonian curves; Analysis of association between attributes, categorical data and log-linear models.

Suggested Readings


M.Sc. (AG.) AGRICULTURE EXTENSION

THIRD SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 302
RESEARCH METHODS IN SOCIAL SCIENCE

Objective:-
This course is designed with a view to provide knowledge and skills in methods of
behavioural sciences research and student will learn the Statistical Package for Social
Sciences (SPSS) for choosing appropriate statistics for data analysis.

UNIT I
Research – Meaning, importance, characteristics. Social sciences research – Meaning,
concept and problems in Social sciences research. Types and methods of Research –
Fundamental, Applied and Action research, Exploratory, Descriptive, Diagnostic,
Evaluation, Experimental, Analytical, Historical, Survey and Case Study. Review of
literature – Need, Search Procedure, Sources of literature, Planning the review work.
Research problem – Selection and Formulation of research problem and guiding
principles in the choice of research problem, Factors and criteria in selection of research
problem, statement of research problem and development of theoretical orientation of
the research problem.

UNIT II
Objectives – Meaning, types and criteria for judging the objectives. Concept and
Construct – Meaning, role of concepts in research and Conceptual frame work
development in research. **Variable** – Meaning, types and their role in research. Definition – Meaning, characteristics of workable definitions, types and their role in research. **Hypothesis** – Meaning, importance and functions of hypothesis in research, Types of hypothesis, linkages, sources, problems in formulation and criteria for judging a workable hypothesis. **Measurement** – Meaning postulates and levels of measurement, Use of appropriate statistics at different levels of measurement, criteria for judging the measuring instrument and importance of measurement in research. **Validity** – Meaning and methods of testing. **Reliability** – Meaning and methods of testing. **Sampling** – Universe, Sample and Sampling Meaning, basis for sampling, advantages and limitations, size and factors affecting the size of the sample and sampling errors – Methods of elimination and minimizing, Maximincon Principle, Sampling – Types of sampling and sampling procedures.

UNIT III

**Research Designs** – Meaning, purpose and criteria for research design, Types, advantages and limitations of each design. Experimental design – Advantages and limitations.

**Data Collection devices** – Interview – Meaning, purpose, types, techniques of interviewing and advantages and limitations. Enquiry forms and Schedules – Meaning, types of questions used, steps in construction and advantages and limitations in its use.

**Questionnaires** – Meaning, difference between schedule and questionnaire, types of questions to be used, pre – testing of the questionnaires or schedules and advantages and limitations.

**Types of scaling techniques** – Meaning, types, limits in construction, advantages and limitations in its use in extension research. Observation – Meaning, types, tips in observation, advantages and limitations in its use.
Case studies – Meaning, types, steps in conducting, advantages and limitations in its use.

Social survey – Meaning, objectives, types and steps in conducting, advantages and limitations.

UNIT IV

Data processing – Meaning, coding, preparation of master code sheet, analysis and tabulation of data, Statistical Package for Social Sciences (SPSS) choosing appropriate statistics for data analysis based on the level of measurement of variables. Report writing – Meaning, guidelines to be followed in scientific report writing, References in reporting.

Practical

Selection and formulation of research problem - Formulation of objectives and hypothesis-Selection of variables based on objectives-Developing the conceptual framework of research. Operationally defining the selected variables-Development of data collection devices.-Testing the validity and reliability of the data collection instruments - Pre-testing of the data collection instrument-Techniques of interviewing and collection of data using the data collection instruments-Data processing, hands on experiences on SPSS, coding, tabulation and analysis. Formulation of secondary tables based on objectives of research. Writing report, Writing of thesis and research articles- Presentation of reports.

Suggested Readings


M.Sc. (AG.) AGRICULTURE EXTENSION

THIRD SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 303

MARKET-LED EXTENSION MANAGEMENT AND ENTREPRENEURSHIP DEVELOPMENT

Objective:-
The student will learn the significance of post harvest management & value addition in present market environment and the challenges and future strategy for market led extension management. Also identifies the information sources and develop strategy for market intelligence and the marketing infrastructure, multilevel marketing and linkages for market led extension. In addition the students would be learning the public private partnerships for market led extension management, the features of contract farming, WTO its implications on agriculture and Understanding the role of IT for market intelligence.

UNIT I
Agricultural extension at cross roads; Changing scenario of agricultural extension at the national level; Market led extension – emerging perspectives; Market led extension – issues and challenges; Dimensions of market led extension. Types and classification of market
Agricultural marketing an overview; Development of a marketing plan, pricing concepts and pricing strategy; Consumer behaviour; Marketing communication and promotional strategies. Marketing agencies and institutions.
UNIT II
Public private linkages in market led extension; Role of SHG in market led extension; Contract farming – a viable approach to meet market challenges; IT enabled approaches for market led extension and communication; Weather service and crop modeling – An effective tool in market led extension. Lacunas in marketing of agriculture product.

UNIT III

UNIT IV
preparation, Project Appraisal techniques – economic, financial, technical, and social; Micro enterprises – Profitable agri enterprises in India – Agro Processing, KVIC industries. Micro financing – meaning, Sources of Finance, Banks, Small scale industries development organizations. Marketing for enterprises – Concept, planning for marketing, target marketing, Competition, market survey and strategies, Product sales and promotion.

**Practical**

Identification and analysis of different marketing sources for agricultural commodities. Development of strategy for an effective market intelligence system; Development of suitable marketing plan to suite rural situation; Visit to local and Distt. Market to study the processes and procedures related to market-led extension. EMT lab – Achievement Motivation, Risk Taking, Understanding Strengths and Blocks, Achievement Planning and Syndrome. Field visit to successful enterprises, Study of Characteristics of successful entrepreneurs Development of Project Proposal, Case Studies of Success / Failure enterprises, Exercise on Market Survey, Field visit to Financial institutions.

**Suggested Readings**

• Kilby Peter (ed) 1971. Entrepreneurship Development.
• V.G.Patel Entrepreneurship Development Programme in India and its Relevance to Developing Countries.
• Hisrich, 2001. ‘Entrepreneurship’, Tata McGraw Hill, New Delhi,
M.Sc. (AG.) AGRICULTURE EXTENSION

THIRD SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 304
MONITORING, EVALUATION AND IMPACT ASSESSMENT TECHNIQUES

Objective
The course intends to orient the learners towards the importance, issues, concepts and methods of monitoring, evaluation and impact assessment. The course will equip them with theoretical as well as analytical understanding and conducting monitoring, evaluation and impact assessment of extension programmes/development projects.

UNIT I
Definition of Monitoring, Objectives, tools, methods and approaches of monitoring; Major Components of project Monitoring: Special Diagnostic studies, Project Completion report and Project sustainability. Monitoring Standards: Past quality or performance, the quality of other systems, desired quality, Professional standards, the quality required, Planning targets and Optimal quality; Usefulness of monitoring: role of project Completion Reports in Monitoring (PCRs); New Approaches to participatory impact Monitoring: Participatory Monitoring: Project Management in Practice; Tips for monitoring and evaluation.

UNIT II
Concepts and models of programme evaluation; Difference between monitoring and evaluation; Types of Evaluation: Objective Oriented, Management Oriented; Context

UNIT III
Concepts and processes in impact assessment; Domains of impact assessment- Technical, sociocultural, economic, institutional, environmental, human, periodic-short and long term; Levels of impact assessment; Approaches in developmental projects; Criteria and indicators: typologies and properties of indicators –goodness and exactness; internal and external validity, specificity, gender sensitiveness, stakeholders’ orientation; Impact monitoring- concept, purpose and methods; Impact evaluation.

UNIT IV
Designs in impact assessment; Participatory need and stakeholders’ perception assessment; Quantitative and qualitative techniques for impact assessment, Social impact analysis; Economic impact analysis cost- benefit analysis, social-cost benefit analysis, partial budget analysis; Environmental impact analysis; Institutional impact analysis; Sustainability analysis; Concepts in livelihood and social vulnerability, adaptation and mitigation; Framework and qualitative and quantitative and tools for livelihood analysis, assessment of social vulnerability and adaptive capacities of communities; tools for farming system and gender analysis. Stakeholders’ analysis; Human impact assessment; Case study; Policy implications of impact assessment.
Practicals

Development of Monitoring and Evaluation framework; Field studies for identification and ranking of criteria/indicators for impact assessment, Development and analysis of cases in evaluation and impact assessment.

Suggested Readings

- Byrn, D. et.al. 1962. Evaluation in Extension. USDA.
M.Sc. (AG.) AGRICULTURE EXTENSION

THIRD SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 305
PRACTICAL
M.Sc. (AG.) AGRICULTURE EXTENSION

FOURTH SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 401
ADVANCED AGRICULTURE EXTENSION MANAGEMENT TECHNIQUES

Objective:-
By the end of the course student will be able to:-

- Develop understanding on concept of MIS, its scope in Agriculture Extension Organization.
- Understand, Develop and Evaluate the MBO System
- To cope up with stress, Resolve conflicts and develop effective inter personal communication skills.

UNIT I
Management Information System (MIS): Basic concepts, types of information needed at various levels, design of MIS in an agricultural extension organization. Scope for computerization, system alternatives and evaluation. Implementation, operation and maintenance of the system.

UNIT II

UNIT III

Decision Support Systems (DSSs): Basic information about Artificial Intelligence (AI), Expert System (ESs), their future applications in extension system. Decision making and talent management, PERT, CPM Techniques and time management.

UNIT IV

Major programmes of advanced transfer of technology: ATMA, KVK and T&V System, AKMARKNET, – concept, meaning, objectives, organizational setup, functions, AGRICLINIC etc.

Practical

Managements Information system, in research & development organizations. Study of Management by Course Objective in an organization. Exercises on Team building process, coping skills with organizational stress, exercises on Decision Support Systems (DSSs). Practical exercise on forecasting techniques, Visit to Management organizations.

Suggested Readings


Objective
In this course the students will learn about an overview of the concept of gender and gender balance on development and develop skills of identifying gender roles, rights, responsibilities and relationships on development. Besides the students will also learn the attitudinal change to internalize gender equity concerns as fundamental human rights and also enhance the capability for identifying and analyzing gender issues in agriculture and allied sectors.

UNIT I
Gender concepts, issues and challenges in development; Gender roles, gender balance, status, need and scope; Gender analysis tools and techniques.

UNIT II
National policy for empowerment of women since independence; Developmental programmes for women; Gender mainstreaming in agriculture and allied sectors – need and relevance; Gender budgeting – A tool for empowering women.

UNIT III
Women empowerment –Dimensions; Women empowerment through SHG approach; Women entrepreneurship and its role in economic development; Public Private
Partnership for the economic empowerment of women; Building rural institution for women empowerment; Women human rights ; Action plans for gender mainstreaming.

**Practical**

Visits to rural institutions of women for studying in the rural institutions engaged in Women empowerment; Visits to entrepreneurial unit of women for studying the ways and means of establishing entrepreneurship units for Women and their development and also SWOT analysis of the Unit; Visit to Center for women development. To study different activities related to projects and research on gender; Visit to office of the Commissioner and Director of Agriculture in relation to Gender Studies and other centre of women studies of Agra District.

**Suggested Readings**

M.Sc. (AG.) AGRICULTURE EXTENSION

FOURTH SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 403
SEMINAR

MAX. MARKS : 100
M.Sc. (AG.) AGRICULTURE EXTENSION

FOURTH SEMESTER
COURSE CONTENTS – DETAILED SYLLABUS

PAPER – 404
RESEARCH (THESIS and VIVA-VOCE)

Suggested Broad Topics for Research Work

- Agricultural communication
- Agricultural Journalism
- Agriculture Education
- Agro Forestry Extension
- Banking & Credit
- Commercialization and Diversification in Agriculture
  - Vegetables
  - Horticulture
  - Agri. tourism
  - Floriculture
  - Mushroom cultivation
  - Bee Keeping
  - Organic Farming
- Cropping System/Farming System
- Diffusion and Adoption
- Dry Farming Technology
- Entrepreneurship Development
- Extension Administration and Management
- Extension Methods and techniques
- Extension Trainings
- Extension Management and Sustainable Agricultural Development Indigenous Practices
- Rural Organization and Institutions
- Scientific Productivity and Human Resource Development
- Youth/Women Development
- Social Marketing
M.Sc. (AG.) AGRICULTURE EXTENSION

FOURTH SEMESTER
COURSE CONTENTS — DETAILED SYLLABUS

PAPER – 405
PARCTICAL
EXTENSION EDUCATION
List of Journals

- Agricultural Extension Review
- British Journal of Educational Technology
- Economic and Political Weekly
- European Journal of Agricultural Education and Extension
- Indian Economic Panorama
- Indian Journal of Adult Education
- Indian Journal of Extension Education
- Indian Journal of Human Development
- Indian Journal of Open Learning
- Indian Journal of Social Development
- Indian Journal of Social Work
- Indian Journal of Training and Development
- Indian Social Science Review
- *Indian Research Journal of Extension Education*
- International Journal of Business and Globalization
- International Journal of Sustainable Development
- Journal of Asia Entrepreneurship and Sustainability
- Journal of Development Studies
- Journal of Educational Planning and Administration
- Journal of Educational Psychology
- Journal of Environmental Extension
- Journal of Environmental Studies and Policy
- Journal of Extension
- Journal of Extension Education
- Journal of Extension System
- Journal of International Agriculture and Extension Education
- Journal of Rural Development
- Journal of Sustainable Agriculture
- The Journal of Entrepreneurship