

## PG COURSE DETAILS FOR M. Sc. (Dairy Extension)

### Aim of the course:

The course aims at disseminating recent technical knowledge related to Dairy Extension, to enable the end-users to adopt the innovations in dairy farming, to carry out technology assessment and refinement of dairy innovations evolved by SHUATS, to undertake HRD programmes in dairy extension and to promote convergence and collaboration for sustainable dairy farming and to disseminate the results of research to the field for adoption through various extension teaching methods.

### Objectives of the course:

1. To orient the students on theories of extension and relevance of theories for extension work in developing countries.
2. To make them understand the role of extension in dairy farming and its effect on sustainable agricultural development
3. To develop human resources for the booming Dairy and Food Industry at par excellence for extension work

### Scope:

Presently, none of the Dairy Science Colleges are offering this postgraduate degree and as a result of which the demand-supply gap of

Dairy Extensionists is quite high. Dairy Extensionists can play an leading role in Dairy Industry in various roles like conducting surveys, Subject Matter Specialists. They can also be a part of academics **Proposed Fees per semester: Rs 30000/-**

### Aim of the Department:

The mandate of this Department is to impart knowledge of Dairy Development to the students, Organizing fertility and veterinary aid campaigns, Providing necessary treatment to animals of dairy animals, Providing vaccination against contagious diseases, educating farmers regarding scientific methods of breeding, feeding, management and health care of animals, educating women in dairy farming and milk products manufacturing.

### Course Curriculum and syllabus:

Courses	Course Code	Name of Course	Credits
<b>Major Courses (25 credits)</b>	DEX-711	Fundamentals of Dairy and Animal Husbandry Extension	3(3-0-0)
	DEX-712	Communication for Dairy Development	3(2-0-1)
	DEX-713	Training for Human Resource Development	3(2-0-1)
	DEX-714	Diffusion and Adoption of Dairy and Animal Husbandry Innovations	3(2-0-1)
	DEX-715	Programme Planning and Evaluation for Rural Development	3(2-0-1)
	DEX-716	e-Extension for Rural Development	3(2-0-1)
	DEX-717	Extension Techniques and Audio Visual Aids	3(2-0-1)
	DEX-718	Participatory Methods for Technology Development & Transfer	2(1-0-1)
	DEX-719	Management in Extension	3(2-0-1)
	DEX-880	Seminar I	1
<b>Minor courses (15 credits)</b>	DEC-714	Agricultural Marketing and Price Analysis	3(2-0-1)
	DEX-720	Entrepreneurship Development	3(2-0-1)
	MAS -815	Experimental Design	3(2-0-1)
	DEC-715	Research Methodology for Social Sciences	3(2-0-1)
	DEC-719	Dairy Business Management	3(2-0-1)
<b>Supporting Courses(05 credit)</b>	MAS – 511	Statistical Methods	3(2-0-1)
	CSIT-701	Computer Orientation	3(2-0-1)
<b>Thesis</b>		<b>Research work</b>	<b>30</b>

### SEMESTER WISE ALLOTMENT OF COURSES:

SEMESTER	S.NO.	COURSE CODE	COURSE TITLE	CREDITS
<b>I (18 Credits)</b>	<b>1</b>	DEX-711	Fundamentals of Dairy and Animal Husbandry Extension	3(3-0-0)
	<b>2</b>	DEX-712	Communication for Dairy Development	3(2-0-1)



### **Theory**

Communication- meaning, concept, purpose and process.

Models and theories of communication. Types of communication intrapersonal, interpersonal, verbal and non-verbal. Criteria of effective communication, Determinants of communication- Empathy, credibility, fidelity, distortion, feedback and barriers to communication. Group and mass communication. Modern communication technologies. Key communicators and their role in dairy and animal husbandry development. **Practical**

Exercises in oral communication and group discussion. Exercises in written communication. Writing for newspapers, magazines. Script writing for radio and TV. Client management in stockman centres. Identification of key communicators in a village.

### **Suggested Readings**

Cragan F.J. & Wright W.D. 1999. *Communication in Small Groups – Theory, Process, Skills*. Wadsworth Publ.

Mcquail D & Windahl S. 1993. *Communication Models for the Study of Mass Communications*. Longman Publ.

Ray G.L. 1991. *Extension, Communication and Management*. Naya Prokash.

Rogers E.M. & Shoemaker F.F. 1971. *Communication of Innovations: A Cross – Cultural Approach*. The Free Press.

Roloft Michael F. 1981. *Interpersonal Communication*. Sage Publ.

Servaes J, Thomas L.J. & Whitle A.S. (Ed). 1997. *Participatory Communication for Social Change*. Sage Publ.

### **DEX- 713 Training for Human Resource Development 3(2-0-1)**

**Objective** : To make the students aware of planning, implementation and evaluation of various training programmes.

### **Theory**

Concept of training and education. Training infrastructure for extension personnel and farmers in India. Role of institution, organization and participants in success of training programme.

Assessment of training needs, curriculum design and development. Training strategies, models of training. Planning, development and execution of training programmes.

Training methods– Lecture, symposium, workshop, case studies, group discussion, conference, convention, panel discussion, buzz session, forum, debates, syndicate, simulation exercises, role playing, brain storming. Evaluation and follow-up of training programmes. **Practical**

Preparation of training programmes for extension personnel, dairy farmers, etc. Evaluation of on-going training programmes. **Suggested Readings**

Selected articles from journals.

### **DEX-714 Diffusion and Adoption of Dairy and Animal Husbandry Innovations 3(2-0-1)**

### **Objective**

To sensitize the students towards technology generation, dissemination and its adoption through effective communication.

### **Theory**

Concept of diffusion. Elements in diffusion process, models and theories of diffusion. Decision-making, Stages in diffusion-adoption process.

Concepts and stages of adoption. Adoption models. Adopter categories and their characteristics. Factors influencing adoption. Attributes of innovations, rate of adoption and sources of information. Consequences of adoption of innovations.

Role of change agents in transfer of technology. Diffusion studies in Dairy and animal husbandry extension. Role of communication in diffusion and adoption process. **Practical**

Study of selected dairy and animal husbandry innovations- the adoption and non-adoption of various practices. Reasons for adoption and non-adoption of innovations

### **Suggested Readings**

Brown Lawrence A. 1981. *Innovation Diffusion: A New Perspective*. Methuen.

Cragan F.J. & Wright W.D. 1999. *Communication in Small Groups – Theory, Process, Skills*. Wadsworth Publ.

Rogers E.M. 2003. *Diffusion of Innovations*. Free Press.

Servaes J, Thomas L.J. & Whitle A.S. (Ed). 1997. *Participatory Communication for Social Change*. Sage Publ.

### **DEX- 715 Programme Planning and Evaluation for Rural Development 3(2-0-1)**

**Objective** : To expose the students on planning, formulation, implementation and evaluation of various animal husbandry development programmes. **Theory**

Importance of programme planning in Dairy and animal husbandry extension. Objectives, principles and steps in programme planning process. Role of Dairy and animal husbandry extension agencies, local leaders, livestock owners and institutions in planning and implementation of need-based Dairy and animal husbandry extension programmes.

Genesis, nature and principles of planning. Planning Commission and its role. Five Year Plans with reference to dairy and animal husbandry development. Organizational structure for planning at different levels.

Concept, principles, types and methods of evaluation. Importance of monitoring various dairy development programmes.

Needs assessment—meaning, importance, classification and steps. Concept of FSR, Participatory Approaches- Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA) Project management techniques- Programme Evaluation and Review Technique (PERT). Critical Path Method (CPM). Project formulation. Project appraisal in terms of social benefit analysis, logical frame work.

**Practical**

Preparation of Dairy development plan for a village. Developing instruments for monitoring and evaluation of on-going development programme at village level (Logical Frame Work ). Exercises on Participatory approaches (RRA,PRA, Case study, Problem Based Learning).

**Suggested Readings**

Collinson M. 2000. *A History of Farming System Research*. CAB Publ.

Dantwala ML & Beroneda JN. 1990. *Rural Development, Approaches and Issues in Indian Agricultural Development since Independence*. Oxford & IBH.

Penders JMA. 1958. *Methods and Programme Planning in Rural Extension*. Veenman & Zonen.

Swanson BE. (Ed). 1997. *Agricultural Extension: A Reference Manual*. FAO.

Thyagrajan M. 1982. *Project Management through Network Techniques (PERTCPM)*. Indian Institute of Public Administration, New Delhi. White Shirley (Ed). 1999. *The Art of Facilitating Participation – Releasing the Power of Grassroots Communication*. Sage Publ.

**DEX- 716**

**e- Extension for rural development**

**3(2-0-1)**

**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.

**Theory**

ICTs- Concept, definition, tools and application in extension education. Reorganizing the extension efforts using ICTs, advantages, limitations and opportunities.

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.

Community Radio, Web, Tele, and Video conferencing. Computer Aided Extension. Knowledge management, Information kiosks, Multimedia. Online, Offline Extension. Tools-Mobile technologies, e-learning concepts.

ICT Extension approaches-pre-requisites, information and science needs of farming community. Need integration. Human resource information. Intermediaries. Basic e-extension training issues. ICT enabled extension pluralism. Emerging issues in ICT. **Practical**

Agri.content analysis of ICT Projects. Handling of ICT tools. Designing extension content. Online extension service. Project work on ICT enabled extension. Creation of extension blogs. Visit to ICT extension projects.

**Suggested Readings**

Batnagar S & Schwere R. 2000. *Information and Communication Technology in Development- Cases from India*. Sage Publ.

Meera SN. 2008. *ICTs in Agricultural Extension: Tactical to Practical*. Ganga-Kaveri Publ. House. Jangam Wadi Math, Varanasi. Willem Zip. 1994. *Improving the Transfer and Use of Agricultural Information - A Guide to Information Technology*. The World Bank, Washington.

**DEX- 717**

**Extension Techniques and Audio-Visual Aids**

**3(2-0-1) Objective :** To train the students about various techniques/methods for transfer of dairy and animal husbandry technologies through suitable audio-visual aids.

**Theory**

Teaching learning process and its principles. Steps in extension teaching process, cone of experience. Learning situation. Criteria for effective teaching and learning.

Extension approaches in Dairy development— individual, group and mass approach (electronic and non electronic). Relative merits and demerits of different teaching methods in dairy and animal husbandry extension.

Audio-visual aids— classification, use and evaluation. Selection criteria of audio-visual aids.

Multi-media projection and computer aided teaching aids for dairy and animal husbandry extension.

Selection of different extension methods for dissemination of dairy and animal husbandry technologies and media-mix.

**Practical**

Preparation and presentation of various audio-visual aids. Use of different teaching methods in field situations. Review of research studies in teaching methods and A.V. aids.

**Suggested Readings**

Dahama OP & Bhatnagar OP. 1987. *Education and Communication for Development*. Oxford & IBH.

- Hass KB & Packer HQ. 1962. *Preparation and Use of Audio-Visual Aids*. Prentice Hall.
- Mathialagan P. 2005. *Text Book of Animal Husbandry and Livestock Extension*. International Book Distributing Co.
- Mody Bella 1992. *Designing Messages for Development Communication. An Audience Participation based Approach*. Sage Publ.
- Oakley P & Garforth C. 1985. *Guide to Extension Training*. FAO.
- Priyanjam Kartik 2005. *Audio Visual Aids and Education*. Dominant Publ.
- Ray GL. 1991. *Extension, Communication and Management*. Naya Prokash.

### **DEX-718 Participatory Methods for Technology Development and Transfer 2(1-0-1)**

#### **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, relation oriented methods. **Theory**

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.

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.

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**

- Adhikary. 2006. *Participatory Planning and Project Management in Extension Science*. Agrotech Publ. Academy.
- Mukharjee N. 2002. *Participatory Learning and Action*. Concept Publ. Co. Singh BK. 2008. *PRA/PLA and Participatory Training*. Adhyayan Publ. & Distr.
- Somesh Kumar. 2002. *Methods for Community Participation*. Vistaar Publ.

### **DEX-719**

### **Management in Extension**

**3(2-0-1)**

**Objective** : This course is intended to orient the students with the key concepts, principles of different Management concepts in extension **Theory**

Management – Meaning, concept, nature and importance, Approaches to management, Levels of management, Qualities and skills of a manager. Extension Management – Meaning, Concept, Importance, Principles of management, Classification of Functions of Management. Planning – Concept, Nature, Importance, Types, Making planning effective. Change Management – factors, process and procedures. Decision making – Concept, Types of decisions, Styles and techniques of decision making, Steps in DM Process, Guidelines for making effective decisions. Organizing – Meaning of Organization, Concept, Principles, Organizational Structure, Span of Management, Departmentalization, Authority and responsibility, Delegation and decentralization, line and staff relations.

Coordination – Concept, Need, Types, Techniques of Coordination. Interpersonal relations in the organization. Staffing – Need and importance, Manpower planning, Recruitment, Selection, Placement and Orientation, Training and Development – Performance appraisal – Meaning, Concept, Methods. Direction – Concept, Principles, Requirements of effective direction, Giving orders, Techniques of direction. Leadership – Concept, Characteristics, Functions, Approaches to leadership, Leadership styles. Organizational Communication – Concept, Process, Types, Net Works, Barriers to Communication. Managing work motivation – Concept, Motivation and Performance, Approaches to motivation. Supervision – Meaning, Responsibilities, Qualities and functions of supervision, Essentials of effective supervision. Managerial Control – Nature, Process, Types, Techniques of Control, Budgeting, Observation, PERT and CPM, MIS.

#### **Practical**

Field visit to Successful enterprises-Study of Characteristics of Successful entrepreneurs Development of Project Proposal -Case Studies of Success / Failure Designing organizational structure -Group activity on leadership development skills.

#### **Suggested Readings**

- Gupta CB. 2001. *Management Theory and Practice*. Sultan Chand & Sons.
- Indu Grover. 2008. *Handbook on Empowerment and Entrepreneurship*. Agrotech Public Academy.
- Khanka SS. 1999. *Entrepreneurial Development*. S. Chand & Co.
- Singh D. 1995. *Effective Managerial Leadership*. Deep & Deep Publ.
- Tripathi PC & Reddy PN. 1991. *Principles of Management*. Tata McGraw Hill.

### **DEX-720**

### **Entrepreneurship Development**

**3(2-0-1)**

**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.

**Theory**

Entrepreneurship – Concept, characteristics, Approaches, Theories, Need for enterprises development. Agri – entrepreneurship – Concept, characteristics, Nature and importance for sustainable Livelihoods. Traits of entrepreneurs – Risk taking, Leadership, Decision making, Planning, Organising, Coordinating and Marketing, Types of Entrepreneurs. Stages of establishing enterprise – Identification of sound enterprise, steps to be considered in setting up an enterprise, feasibility report, product selection, risk and market analysis, legal requirements. Project Management and Appraisal – Market, Technical, Financial, Social Appraisal of Projects.

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. Gender issues in entrepreneurship development – Understanding gender and subordination of women, Gender as a development tool, Policy approaches for women entrepreneurship development. Success and Failure stories for enterprises – Issues relating to success and failure of enterprises – Personal, Production, Finance, Social, Marketing.

Vasanta Desai. 1997. *Small Scale Industries and Entrepreneurship*. Himalaya Publ. House.

**Practical**

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-Field visit to extension organizations to understand the functions of management -Group exercise on development of short term and long term plan-Simulated exercise on techniques of decision making

**Suggested Readings**

Indu Grover. 2008. *Handbook on Empowerment and Entrepreneurship*. Agrotech Public Academy.

Khanka SS. 1999. *Entrepreneurial Development*. S. Chand & Co.

Singh D. 1995. *Effective Managerial Leadership*. Deep & Deep Publ.