



**Programmes Outcomes, Programme Specific Outcomes and Course
Outcomes of all programmes**

IRDM Faculty Centre

Ramakrishna Mission Vivekananda Educational and Research Institute

Programme Name: MSc in Agriculture and Rural Development

Programme Outcome:

1. To impart practical based knowledge on agriculture and allied sectors
2. To impart in-depth practical knowledge in rural development
3. To provide hand hold exposure on agriculture -allied sectors like Diary, Apiculture, Fishery, Poultry science etc.
4. To disseminate different rural technologies through various extension activities
5. To identify and overcome the problems encountered in day-to-day life in agriculture and social sector
6. To provide knowledge on commercial agricultural production practices
7. To make students competitive in pursuing higher studies

Programme Specific Outcome:

1. To get an exposure to a new rural area and the socio-economic condition of people
2. To provide knowledge from ancient to modern agricultural practices
3. To face the rural reality during the rural living and learning experience
4. To impart in-depth practical knowledge in crop cultivation practices
5. To cope with adverse situations during their rural staying at different remote parts of rural Bengal.
6. To provide knowledge on working of different farm implements
7. Detailed knowledge on various agri-business activities
8. To build the manpower for serving the rural community
9. To disseminate recent agricultural technologies through extension.

10. To have a hand on experience in some rural project related to their curriculum. The project work will be given by the organisation according to their requirement. The students will learn through this assignment while organization may be benefitted with the results of the project.

Course Outcome

SEMESTER-I		
Course Code	Course Name	Course Outcomes
ARD 101	Rural Sociology and Integrated Rural Development	The students become familiar with the typical life of the rural mass and their livelihood patterns.
ARD 102	Basic Economics	<ul style="list-style-type: none"> ➤ The students have basic idea on Indian economy and the root of rural poverty in India. ➤ The students are able to know how to measure the poverty through different tools and techniques ➤ They can prepare the action plan to combat the poverty
ARD 103	Extension Education-I	<ul style="list-style-type: none"> ➤ The students can perceive the importance of extension education in respect to technology transfer among the famers' ➤ They can prepare different audio-visual aids to provide informal education among the farmers ➤ The students came to know the different strategies to disseminate and diffuse demand driven technologies among the farmers' and provide location specific solutions to solve farmers problem
ARD 104	Fundamentals of Crop Production	<ul style="list-style-type: none"> ➤ Basic idea about Agro-climatic zones of west Bengal ➤ Basic concept on soil sampling, soil quality testing (pH, EC, C, N, P estimation), organic farming and vegetative plant propagation methods(theoretical knowledge). ➤ Basic idea about seasonal cropping patterns ➤ Basic idea on use of fertilizers, common agricultural practices
ARD 105	Research Methodology-I	<ul style="list-style-type: none"> ➤ To impart the different tools and techniques used in social research ➤ To know the data collections method through Participatory Research Appraisal (PRA) ➤ To gain the knowledge on data analysis and interpretation through Statistical Package of Social Science (SPSS) and MS Excel

ARD 106	Indian Culture and Spiritual Heritage-I	<ul style="list-style-type: none">➤ The students are acquainted with the rich cultural and spiritual heritage of India that exist and is traditionally maintained in the rural India.➤ The students are familiar with value based education system which helps them to work under extreme pressure and deals with any problems empathically
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SEMESTER-II

ARD 201	Human Resources and Organisational Management	<ul style="list-style-type: none"> ➤ The students develop their management skills and leadership quality. ➤ They grow their team building capacity and negotiation skill. ➤ They are able to prepare training schedule, budget and to conduct recruitment process.
ARD 202	Demography, Social Problem and Intervention	<ul style="list-style-type: none"> ➤ The students acquired the skills to intervene the various social problems using casework method, group work method, community organisation, social welfare administration.
ARD 203	Rural Economics, Cooperation & Microfinance	<ul style="list-style-type: none"> ➤ The students have in-depth knowledge on rural employment generation schemes, Govt. poverty alleviation and employment-generation scheme, rural development in annual budget, Price index; Rules, regulation, impact of WTO in Indian and rural economy. ➤ To gain the strategies to form Self Help Group for empowerment generation
ARD 204	Fundamentals of Crop Protection	<ul style="list-style-type: none"> ➤ One will be able to know about all types of diseases associated with crops ➤ One can understand about all the causative organisms behind the damages caused to crops ➤ One will have a vivid knowledge about the pesticides: dosage, types and mechanism of action of the same ➤ Furthermore, a clear understanding of Integrated Pest Management can be achieved ➤ One can know about weeds: biology, ecology, classification and diversification ➤ One will be able to know about herbicides: chemical nature. classification, dosage and mode of action ➤ Practical implications of many of the above gained knowledge will be possible
ARD 205	Research Methodology-II	<ul style="list-style-type: none"> ➤ To learn the different statistical techniques to conduct scientific research precisely ➤ To gather in depth knowledge on scientific interpretation techniques
ARD 206	Agribusiness Management and Entrepreneurship Development	<ul style="list-style-type: none"> ➤ To gather the skills on market survey, price determination techniques and supply chain management etc. ➤ The students know how to develop Entrepreneurship and agri-business plan, how to deal Cash Management and Marketing Management for Agri Business
ARD-207	Indian Culture and Spiritual Heritage-II	<ul style="list-style-type: none"> ➤ The students are acquainted with the rich cultural and spiritual heritage of India that exist and is traditionally maintained in the rural India. ➤ The students are familiar with value based education system which helps them to work under extreme

		pressure and deals with any problems empathically
ARD-208	Rural Living and Learning Experience-I	➤ The students develop coping strategy in village situation. They have a clear idea about the rural problems and prepare action plan based on available local resources
ARD 251	Forest and Tribal Livelihoods Development	➤ To generate better understating about forest based tribal people and their livelihood and know about the different and role of forest protection committee to conserve the forest eco system

SEMESTER-III

Course Code	Course Name	Course Outcomes
ARD 301	Rural Development Management	<ul style="list-style-type: none"> ➤ The students should have come across the basic steps/criteria which can be considered to formulate any projects. ➤ The students should know the various components of a Project including Logical Framework Analysis, Budgeting, Stake holder analysis etc. ➤ The students will came to know the different techniques to identify the most viable projects ➤ The students may be able to set the various indicators against each activity to track the ongoing progress of a Project and also know the monitoring mechanism for the same. ➤ The students should have develop the decision making tools which can be implemented/performed during a critical situation. ➤ The students will be able to coordinate with various officials to successfully organize any projects/activities ➤ The students will be able to prepare the Project Proposal based on the Rural Developments/Social development activities

ARD 302	Rural Development and Extension Programmes & Organizations	<ul style="list-style-type: none"> ➤ The students should aware about the various extension activities running by Central & State Govt. ➤ They know the major flagship programmes introduced by Govt. of India to eradicate the poverty, sustain the livelihood, conserve the water etc. ➤ Will be able to know the various rural development programmes run by different units of Ramakrishna Mission ➤ They will gather hand hold experience on functioning of Extension Agency like ATMA, KVK etc. ➤ Will know the ongoing programmes under different ministries of Govt. of India ➤ The students will be developed an idea on how to link up the extension activities to any rural development programmes
ARD 303	Rural Health Management	<ul style="list-style-type: none"> ➤ The students should know the various channels of health care services provided by Govt. ➤ They will develop a concept on different communicable and non-communicable diseases ➤ They should gather some basic concept on various first hand remedies against various diseases ➤ The students can aware the rural mass about different health related schemes and programmes adopted by state and central Govt. ➤ Through posters the students will be able to disseminate the different causes of Diarrhea, Dengue, HIV etc. ➤ They will be able to know the different components of Rural hospitals ➤ They will understand the waste management concepts ➤ The students will come across the different sanitation units of a village.
ARD 304	Rural Women and Child Development	<ul style="list-style-type: none"> ➤ The students should know the different crimes occurred against the rural women and children especially human trafficking, sexual abuse, dowry, female infanticide etc. ➤ They will know the various reasons for gender discrimination which further accelerate the different social problems ➤ They will aware the different legal rights, policies and programmes to protect the victimized women and children ➤ They should have independently develop an intervention strategy to overcome various social problems existed in the society

		<ul style="list-style-type: none"> ➤ They should aware the different shelter (Home) provided by the Govt. like SWADHAR, Short Stay home ➤ They will be able to facilitated the victims to get back into the main stream of the society
ARD 305	Technologies in Agriculture and Allied Sectors	<ul style="list-style-type: none"> ➤ The students should know the different identical features and benefits of the livestock rear by the rural communities. ➤ They should know how to prepare the Vermi-compost ➤ They will know the different steps involve in Apiculture and equipments for the same ➤ They will be able to identify the different agri-implement and will be able to operate the tractor in agricultural field ➤ Will understand the different sources and methods of irrigation and techniques for reduce the wastage of water ➤ They will be able to cultivate the Mushroom ➤ They should know the different stakeholders involve in agri-marketing and aware the various channels for the same ➤ They should know how to measure the specific gravity of the milk, how to take reading of the body temperature of Cow etc. ➤ They should know the different grassroots innovations functioning in the agricultural field ➤ They should know the role of fishery science in rural development.
ARD 306	Rural Living and Learning Experience-II	<ul style="list-style-type: none"> ➤ The students should know about the rural life and rural community ➤ Know the livelihood patterns of the villagers ➤ Will be able to identify the different problems (Agricultural, Health, Social) faced by the rural people as well as able to facilitated them to minimize the problems ➤ Will be able to identify the location specific needs ➤ Might have developed grassroots planning and monitoring of a livelihood based project by participatory planning ➤ Will be able to capture the cultural graphs/changes between early twentieth century and current scenario ➤ Will be able to prepare the community action plan to improve the live and livelihood of the rural folks

Special Modules

ARD 355	Extension Education-II	<ul style="list-style-type: none">➤ The students should know the role of the information communication technologies in agriculture and allied sector➤ Should be able to familiar with different extensions tools➤ Should know the ICT based technologies to successfully run any extension based projects➤ Should develop the entrepreneurship activities in agriculture➤ Should know the role of international organizations involved in extension services➤ Will be able to prepare the training event for the farmers including budgeting➤ Should know the different activities performed by Agricultural Technology Management Agency (ATMA)➤ Should able to facilitate the farmers to adopt any suitable technologies
ARD-356	Social Problem Intervention	<ul style="list-style-type: none">➤ The students should know about the different evil practices that are strongly existed in the society.➤ The students should know the different aspects of crime, nature of crime and causes of crime, different types of criminal etc.➤ They should get an idea about the motives of criminals, their characteristics features and psychology etc.➤ They should be acquainted with the diverse theory of criminology including Retributive theory, Psycho-analytical' theory, Tannenbaum's theory, Merton's Theory etc.➤ They should know the importance of criminal research and will be able to constructed the hypotheses in criminal research➤ They should gain the concept of historical changes from the concept of punishment to correction and reformation➤ They should know the different Acts which could be effectively implemented against the criminals➤ They will aware about the different types of punishment like Cognizable and Non-cognizable offences, Bailable and non – bailable➤ They should know the distinguish between General Diary (GD) and FIR and will be aware

		that which one would be followed in different situation
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SEMESTER - IV		
Course Code	Course Name	Course Outcomes
ARD 401	Rural Development Administration	<p>The students should learn the following</p> <ul style="list-style-type: none"> ➤ The formation and developmental process of Panchayati Raj Institution (PRI) in India ➤ The role of State Election Commission, State Finance Commission, District Planning Commission in Panchayati Raj Institution (PRI) ➤ The role of Panchayati Raj Institution's (PRI) to effectively implementation of the various schemes under Grampanchayat ➤ The democratic decentralization process, three tier structure and their contribution ➤ The basic features of 73rd Amendment Act ➤ Social Legislations, Rights of rural people to social justice, security and welfare ➤ The students should know the different activities of Gram Panchayat (GP) and will be aware that how does it functioning ➤ Traditional administrative set up in Tribal area ➤ Total Sub Plan (TSP) and organization change in tribal development ➤ Land reforms, Right to Information Act (RTI) and performance of Community Based Organization (CBO) in Rural Development
ARD 403	Seminar-I	<ul style="list-style-type: none"> ➤ The students should know the viability of their research topic as ratified by a group of external examiners
ARD 404	Seminar-II	<ul style="list-style-type: none"> ➤ The students will know to find out their results against each objectives as approved by the group of external examiners

ARD 405	Dissertation + Research Paper Submission	<ul style="list-style-type: none"> ➤ The students will learn to conduct an independent research work and will be able to prepared a Dissertation copy ➤ The students will be able to write a research article to be communicated to a peer reviewed journal
ARD 406	Learning through Organisational Attachment	<p>The students should learn and gain the following</p> <ul style="list-style-type: none"> ➤ Study on the Organization especially in the specific thrust area in Rural Development ➤ How does the organization functioning ➤ The structure of the Organization (Organogram) and the various activities carried out by the organization ➤ Should aware the culture and decorum of the office ➤ The students will get a handhold exposure to working with the Organization in a small thematic area/projects ➤ Should know and differentiate the priority area of the project work ➤ Should know about the spirit of Team Work by a part of the team to complete any projects within stipulated time period. ➤ Will be able to prepared the report based on their field visit ➤ Will be able to learnt the technique how can claim their actual expenses (reimbursement) for travelling, food & logging ➤ Should know how to build the rapport with various functionaries at different levels to successfully execute the project
ARD 451	Natural Resource and Watershed Management	<p>The student should gain the following</p> <ul style="list-style-type: none"> ➤ Should know the different source of Natural resources ➤ Concept of Watershed and different types of watershed based on their area ➤ Participatory engagement and community mobilization to construct a watershed programme ➤ Ground water management and common property sources ➤ Formation of SHG's to facilitate the women for their empowerment ➤ Will be able to prepared the watershed development plan on the basis of land capability classification

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| | | <ul style="list-style-type: none">➤ Should aware about the roles of different committees to manage the watershed➤ Should know the monitoring and evaluation aspects of watershed➤ Should know the concept of agro-forestry and grassland management policy for watershed areas |
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Programme Name: MSc in Agricultural Biotechnology

Programme Outcome:

1. To provide an apprehensive knowledge on application biotechnology in modern agriculture
2. To provide basic knowledge on crop production and crop protection
3. To impart in-depth practical knowledge in production of vermicompost, biopesticides, biofertilizers etc.
4. To provide knowledge on the basic rules of laboratory safety and use of instruments to conduct basic experiments
5. Use of basic microbial techniques to isolate and characterize the isolated microorganisms from soil and water samples
6. Use of statistical design, statistical software to interpret the data collected for research
7. Use of modern techniques to conduct research work in plant biotechnology
8. To build the manpower to serving agricultural sector
9. To make students competitive in pursuing higher studies

Programme Specific Outcome:

1. To provide knowledge of application of biotechnology in plant biology
2. Use of modern tools and techniques to conduct research on plant sciences
3. Use of statistical tools for interpretation of data
4. Use of molecular marker for screening of efficient germplasm
5. Use of plant tissue culture techniques for production of disease free plants

Course Outcome

SEMESTER – I		
Course Code	Course name	Course outcomes
ABT-101	Fundamentals of Crop Production	<ul style="list-style-type: none"> • Basic idea about Agro-climatic zones of west Bengal • Basic concept on soil sampling, soil quality testing (pH, EC, C, N, P estimation), organic farming and vegetative plant propagation methods(theoretical knowledge). • Basic idea about seasonal cropping patterns • Basic idea on use of fertilizers, common agricultural practices
ABT-102	Fundamentals of Crop Improvement	<ul style="list-style-type: none"> • Basic idea on breeding techniques for crop improvement • Basic concept on mendelian genetics, gene interaction, Linkage and crossing over • To learn the process of fertilization
ABT-103	Plant Physiology	<ul style="list-style-type: none"> • Basic idea about general plant physiology: Transpiration, photosynthesis and stress • Hand on experience on estimation of osmotic potential as well chlorophyll of plant sample
ABT-104	Biostatistics-I	<ul style="list-style-type: none"> • To learn different statistical measures(Central tendency; measures of dispersion, correlation and regression etc) • Collection of data and its analysis and its interpretation • Tabulation and graphical representation of data • Sampling and its type • Hypothetical testing (T test, Z test, F test etc)
ABT-105	Molecular Biology	<ul style="list-style-type: none"> • Basic idea about macromolecule such as protein and DNA, RNA • Central dogma of molecular biology • Basic idea about gene expression with special reference to post transcriptional modifications
ABT-106	Plant Tissue culture	<ul style="list-style-type: none"> • General idea to establish <i>in vitro</i> culture of plant. • Media preparation, sterilization and culture of different explants for induction of fresh culture, shoot tip, callus culture, embryo culture, anther culture etc
ABT-107	Spiritual and Cultural Heritage of India-I	<ul style="list-style-type: none"> • The students are acquainted with the rich cultural and spiritual heritage of India that exist and is traditionally maintained in the rural India. • The students are familiar with value based education system which helps them to work under

		extreme pressure and deals with any problems empathically
SEMESTER - II		
ABT-201	Fundamentals of Crop Protection	<ul style="list-style-type: none"> • One will be able to know about all types of diseases associated with crops • One can understand about all the causative organisms behind the damages caused to crops • One will have a vivid knowledge about the pesticides: dosage, types and mechanism of action of the same • Furthermore, a clear understanding of Integrated Pest Management can be achieved • One can know about weeds: biology, ecology, classification and diversification • One will be able to know about herbicides: chemical nature, classification, dosage and mode of action • Practical implications of many of the above gained knowledge will be possible
ABT-202	Plant Biochemistry	<ul style="list-style-type: none"> • One can have a basic understanding of the structure and function of biomolecules like carbohydrates, protein and lipids • An idea of enzyme mechanisms can be understood • One can comprehend the metabolic pathways • One will be equipped with practical hand on experience to estimate different biochemical parameters like sugar, protein, free fatty acids etc
ABT-203	Biostatistics-II	<ul style="list-style-type: none"> • A knowledge of different statistical design to study different cropping systems • A clear understanding of several statistical tools used in plant biological studies
ABT-204	Microbiology	<ul style="list-style-type: none"> • One can get the idea of several microscopic techniques used in studying microbes • To learn how to isolate the microorganisms from soil and water followed by their culture on medium under controlled condition • One will get to know about the life stages of the microorganisms. • One will understand about how the microbes affect the soil environment. • One will understand about mushroom culture which may help in further business prospect.
ABT-205	Genetic Engineering	<ul style="list-style-type: none"> • One will understand about genetic modification through gene cloning, gene transfer • One will get some idea about host restriction and modification system. • One will get some theoretical idea about the techniques used in DNA estimation, Electrophoresis, blotting, PCR, DNA sequencing etc • Basic knowledge on Agrobacterium mediated gene transfer
ABT-206	Molecular Tools and	<ul style="list-style-type: none"> • One will get some idea of handling the laboratory instruments.

	Techniques	One will be able to learn about the molecular techniques used in DNA extraction.
ABT-207	Cell Biology	<ul style="list-style-type: none"> • One will be able to understand about prokaryotes and eukaryotic cell structure. • One will understand about cell cycle. • One will be able to get some idea about cellular organelles and their function. • Basic knowledge on cellular signal transduction.
ABT-208	Spiritual and Cultural Heritage of India-II	<ul style="list-style-type: none"> • The students are acquainted with the rich cultural and spiritual heritage of India that exist and is traditionally maintained in the rural India. • The students are familiar with value based education system which helps them to work under extreme pressure and deals with any problems empathically
ABT-209	Seminar-I	<ul style="list-style-type: none"> • An effective way to learn, understand, create and deliver power point presentation in front of delegates.
SEMESTER - III		
ABT-301	Immunology	<ul style="list-style-type: none"> • Basic idea about immune system and its components • One will be able to learn theoretical knowledge on the principle and technique of tools like ELISA , Immunoelectrophoresis, Immunoblot, hybridization based detection method to detect the pathogen
ABT-302	Bioinformatics	<ul style="list-style-type: none"> • Basic idea about Database like NCBI, Public Biological Databases, and File format (gene bank file format, FASTA format, PDB format). • One will able to use tools to generate 3 dimensional structure of protein. • Comparative genomics and phylogeny study.
ABT-303	Molecular breeding	<ul style="list-style-type: none"> • One will get basic idea about molecular marker and its type. • Use of PCR based marker system (RAPD, ISSR etc) to analyze the plant DNA sample. • Use of software to study the genetic divergence and similarity. • Gel electrophoresis and subsequent study of agarose gel using gel doc system.
ABT-304	Genomics and Proteomics	<ul style="list-style-type: none"> • Classical ways of genome analysis, gene annotation. • 16S rRNA typing/ sequencing, EST's and SNP's.
ABT-305	Transgenic in Crop improvement	<ul style="list-style-type: none"> • Concepts, principles and scope of transgenic technique vis-à-vis Biotechnology. • Application of transgenics for improvement in agriculture and human benefit.
ABT-306	Environmental Biotechnology	<ul style="list-style-type: none"> • Detailed knowledge of wastewater management. • Application of Biotechnology in solid waste management: Composting; Vermiculture; Effective micro-organism technology, Biogas, sanitary landfill technology

		<ul style="list-style-type: none"> • Preparation of biofertilizer.
ABT-307	Organisational /Industrial Placement	<ul style="list-style-type: none"> • Study on the organization: its structure, foundation, activities. • To have an hand on experience in understanding the decorum of office work • To work as a part of team and value the team work • To understand the importance of prioritization of particular thematic project work • To have a chance to work with delegates followed by probable placements
ABT-308	Seminar-II: Proposed plan of dissertation work	<ul style="list-style-type: none"> • An effective way to learn, understand, create and deliver power point presentation related to research problem in front of delegates.
SEMESTER - IV		
ABT-401	Seminar-III	<ul style="list-style-type: none"> • Sharing of findings of research which is done in last six month with delegates
ABT402	Dissertation Work	<ul style="list-style-type: none"> • Hand on experience on how to conduct research work

The evaluation pattern for both theory and practical aspects of a course are envisaging four Unit Test (40% wattage) each followed by semester ending examinations (60% weighted). In general, a Unit Test corresponds to one or more course outcomes, thus ensuring their direct assessment. In the semester ending examinations theory and practical assessment are conducted separately to access both theoretical knowledge and practical skills of the students.

Two RLLLE programmes are conducted for M.sc ARD student to provide them with an opportunity to learn why applying classroom knowledge in real life situation. In LOA Programs both M.sc ARD and AGBT Students works in the real life projects of reputed agricultural organizations. Both these courses are evaluated separately based on the field performance, seminar presentation and quality of documentation. All the students of the centre mandatorily take up dissertation work where both theoretical and practical aspects of conducting independent research are tried and scientifically documented. This is evaluated in the form of seminar and research report by a group of external experts.