

New Initiatives Proposed by Fifth Deans' Committee

I. Student READY (Rural and Entrepreneurship Awareness Development Yojana)

To reorient graduates of agriculture and allied subjects for ensuring and assuring employability and to develop entrepreneurs for emerging knowledge intensive agriculture, the component envisages the introduction of the program in all the agricultural universities as an essential prerequisite for the award of degree to ensure hands on experience and practical training. Considering the variation in different streams of agricultural education and feasibility, the Committee proposes to include the following five components, which are interactive and are conceptualized for building skills in project development and execution, decision-making, individual and team coordination, approach to problem solving, accounting, quality control, marketing and resolving conflicts, etc. with end to end approach in Student READY program.

- i. Experiential Learning/Hands on Training
- ii. Skill Development Training
- iii. Rural Agriculture Work Experience
- iv. In Plant Training/ Industrial attachment
- v. Students Projects

The students will be required to have any three of the five components listed above depending on the requirement of their graduate education but it should be implemented for the complete year, so that their education upto level of III year may get right information in IV year and finally they should attend right stage of entrepreneurship.

II. Introduction of common courses in all agriculture disciplines

The Fifth Deans' Committee is of the opinion that some of the courses like Environmental Studies & Disaster Management, Communication Skills & Personality Development, Information & Communication Technology, Entrepreneurship Development & Business Management,

Agri-Informatics and Economics and Marketing need to be taught in all the undergraduate programmes of agricultural sciences, as these are ,must for overall enhanced professional capacity as well as for personality development and to deal with the unforeseen circumstances.

III. Introduction of new degree programs

Since Biotechnology has become an important subject in the field of agricultural sciences, the Committee has recommended introduction of B. Tech (Biotechnology) course in SAUs. Similarly, Sericulture being an important traditional subject, the Committee endorses its inclusion as one of the disciplines in agricultural sciences.

It has been observed that the degree in Home Sciences has been losing its importance in the recent past, particularly in terms of limited employability. The Committee has recommended to rechristen the discipline of Home Science to Community Science and introduce one more new course in Food Nutrition & Dietetics under the umbrella of Community Science.

M. Development of DPRs for establishment of new colleges

The Deans Committees have been listing some minimum standards/requirements for the colleges. Fifth Deans Committee has developed a comprehensive Detailed Project Report (DPR) for establishing a college for each discipline.

V. Holistic distribution of courses

The Committee has distributed the courses in a systematic way so as to teach basic courses first followed by principles and finally skill development. It is planned to keep courses related to basic and fundamentals in first year, theory/practicals and principles with present State of Art of Technology in second year, modern and frontier area of education in third year and Student READY program of one year in final year.

VI. Declaring degrees in Agricultural Sciences as professional

The Indian Council of Agricultural Research constituted a committee to review Essential Qualifications and Degree Nomenclature of various programmes running in Agricultural Universities under the chairmanship of Dr R B Lal. This Committee has recommended to consider degree in agriculture as a professional degree. The Fifth Deans Committee endorses this view and recommends to declare all degrees in agricultural sciences as professional, like Veterinary and Animal Science, which include undergraduates in:

1. Agriculture
2. Agriculture Engineering
3. Biotechnology
4. Dairy Technology
5. Fisheries
6. Food Technology
7. Forestry
8. Community Science (Home Science)

9. Food Nutrition and Dietetics

10. Horticulture

11. Sericulture

VI. Making implementation of recommendations of Deans Committee mandatory

A lot of efforts are made to improve the quality of agricultural education to make it internationally competitive. Implementations of the recommendations of the Fifth Deans' Committee to be made mandatory for accreditation of academic programmes and academic institutions by the National Agricultural Education Accreditation Board (NAEAB).

Student READY Programme

Student READY programme was launched by the Hon'ble Prime Minister of India on 25th July, 2015

Introduction

The term **READY** refers to “Rural Entrepreneurship Awareness Development Yojana”.

To reorient graduates of agriculture and allied subjects for ensuring and assuring employability and develop entrepreneurs for emerging knowledge intensive agriculture, the component envisages the introduction of the program in all the Agricultural Universities as an essential prerequisite for the award of degree to ensure hands on experience and practical training.

Component of the programme : It is proposed to include the following components in Student READY programme.

- i. Experiential Learning/Hands on Training
- ii. Skill Development Training
- iii. Rural Agriculture Work Experience
- iv. In Plant Training/ Industrial Attachment
- v. Students Projects

In some disciplines where some components, say, Experiential Learning, is not possible at graduate level, the students will be given Hands on Training and/or Skill Development Training, but it should be (out of these 5 components) implemented for the complete year.

All the above mentioned components are interactive and are conceptualized for building skills in project development and execution, decision-making, individual and team coordination, approach to problem solving, accounting, quality control, marketing and resolving conflicts, etc. with end to end approach. Salient features of each component are summarised below.

- Experiential Learning helps the student to develop competence, capability, capacity building, acquiring skills, expertise, and confidence

to start their own enterprise and turn job creators instead of job seekers. This embraces the earning while learning concept. Experiential Learning is a major step forward for high quality professional competence, practical work experience in real life situation to graduates, production oriented courses, production to consumption project working, facilitates producing job providers rather than job seekers and inculcates entrepreneurial orientation.

- Rural Agriculture Work Experience also enables the students to gain rural experience giving them confidence and enhancing on-farm problem solving abilities in real life situations especially in contact with farmers, growers, other stakeholders.
- In-plant Training for a short period of time in relevant industry helps gain the knowledge and experience of the work culture. In-plant Training by reputed organizations either MNCs or organised sectors provide an industrial exposure to the students as well as helps develop their career in high tech industrial requirements.
- Skill Development component includes use of Agriculture Systems & devices for enhancing functional skill. It is expected that basic infrastructure and Experiential Learning Unit available in universities may help in boosting livelihood-ensuring opportunities.
- Student Project is essential for students interested in higher education. Through this component, they will know how to identify research problem, create experimental set up and to write report etc.

For the discipline of Dairy Technology, Food Science & Technology and Agricultural Engineering there will 20 weeks in-plant training in place of RAWE. The students of Veterinary Science discipline will undergo six months training at hospitals.

All the components as per suitability of course i.e. Experiential Learning, Skill Development Training, Rural Agriculture Work Experience (RAWE), Internship/In-Plant Training and Student Projects are included in the final year of study for 2 semesters, to provide entrepreneurial skills, confidence and hands on experience. There are 20 credits for Experiential Learning/Skill Development Training (24 weeks), 10 credits for RAWE (10 weeks programme) and 10 Credits for Industry Attachment/Student Project (10 weeks attachment to industry). For the students of Veterinary Science, Experiential Learning is moduled as per VCI pattern.

Some of the important components of Student READY programme are given as follows:

I. Experiential Learning (EL)

a) Concept

The word 'experiential' essentially means that learning and development are achieved through personally determined experience and involvement, rather than on received teaching or training, typically in group, by observation, study of theory or hypothesis, and bring in innovation or some other transfer of skills or knowledge. Experiential learning is a business curriculum-related endeavour which is interactive.

EL is for building (or reinforcing) skills in project development and execution, decision-making, individual and team coordination, approach to problem solving, accounting, marketing

and resolving conflicts, etc. The programme has end to end approach. Carefully calibrated activities move participants to explore and discover their own potential. Both activities and facilitation play a critical role in enhancing team performance.

b) Objectives

EL provides the students an excellent opportunity to develop analytical and entrepreneurial skills, and knowledge through meaningful hands on experience, confidence in their ability to design and execute project work.

The main objectives of EL are:

- To promote professional skills and knowledge through meaningful hands on experience.
- To build confidence and to work in project mode.
- To acquire enterprise management capabilities

c) Duration

The experiential learning programme will be offered for 180 days (one semester) period in the final year. As the programme is enterprise oriented, students and faculty are expected to attend the activities of the enterprise even on institutional holidays with total commitment, and without any time limit or restriction of working hours for ELP. The Experiential Learning Programme shall be run for full year by making two groups and rotating activities of the final year in two groups.

d) Attendance

The minimum attendance required for this programme is 85%. The attendance of a student will be maintained at the EL unit. The attendance particulars shall be communicated to the Chief Executive Officer (Associate Dean) by the Manager of the EL unit every week. The students will be eligible for the final evaluation of EL only when the attendance requirement is met with. Any student in the event of recording shortage of attendance has to re-register the EL when offered next by paying the assigned fee.

e) Students' Eligibility

To get the eligibility for registering for the EL programme, the students should have completed all the courses successfully. No student should be allowed to take up the EL programme with backlog/repeat courses. The assignment/allotment of the EL programme shall be based on merit of the student at the end of 5th semester. A separate certificate should be issued to the students after successful completion of EL course. Allotment of EL programmes amongst students to different modules should be done strictly on the basis of merit at the end of fifth semester.

II. Rural Agricultural Work Experience

The Rural Agricultural Work Experience (RAWE) helps the students primarily to understand the rural situations, status of agricultural technologies adopted by the farmers to prioritize the farmers' problems and to develop skills & attitude of working with farm families for overall development in rural area. The timings for RAWE can be flexible for specific regions to coincide with the main cropping season.

2. Objectives

1. To provide an opportunity to the students to understand the rural setting in relation to agriculture and allied activities.
2. To make the students familiar with socio-economic conditions of the farmers and their problems.
3. To impart diagnostic and remedial knowledge to the students relevant to real field situations through practical training.
4. To develop communication skills in students using extension teaching methods in transfer of technology.
5. To develop confidence and competence to solve agricultural problems.
6. To acquaint students with on-going extension and rural development programmes.

III. In Plant Training (IPT)

Technology and globalization are ushering an era of unprecedented change. The need and pressure for change and innovation is immense. To enrich the practical knowledge of the students, In-plant Training shall be mandatory in the last semester for a period of up to 10 weeks. In this training, students will have to study a problem in industrial perspective and submit the reports to the university. Such In-plant Trainings will provide an industrial exposure to the students as well as to develop their career in the high tech industrial requirements. In-plant Training is meant to correlate theory and actual practices in the industries. It is expected that sense of running an industry may be articulated in right way through this type of industrial attachment mode.

Objectives

- To expose the students to industrial environment, which cannot be simulated in the university.
- To familiarize the students with various materials, machines, processes, products and their applications along with relevant aspects of shop management.
- To make the students understand the psychology of the workers, and approach to problems along with the practices followed at factory
- To make the students understand the scope, functions and job responsibility-ties in various departments of an organization.
- Exposure to various aspects of entrepreneurship during the programme period.

The students will be required to submit report on various aspects and will be issued certificates upon successful completion of the student READY components. It is planned that **ICAR will provide Rs. 3000/pm per student for the duration of RAWE/ In- plant Training/ Hands-on Training (HOT) / Skill Development Training subject to a maximum of 6 months.**

Fifth Deans' Committee, after deliberations with the Conveners/Co-conveners and Subject Matter Specialists, recommends the discipline-wise Student READY programmes as follows:

AGRICULTURE

Semester VII

Rural Agricultural Work Experience (RAWE) and Agro-Industrial Attachment (AIA)

This program will be undertaken by the students during the seventh semester for a total duration of 20 weeks with a weightage of 0+20 credit hours in two parts, namely, RAWE and AIA. It will consist of general orientation and on-campus training by different faculties followed by village attachment/unit attachment in university/ college/ KVK or a research station. The students would be attached with the agro-industries to get an experience of the industrial environment and working. Due weightage in terms of credit hours will be given depending upon the duration of stay of students in villages/agro-industries. At the end of RAWE/AIA, the students will be given one week for project report preparation, presentation and evaluation.

The students would be required to record their observations in field and agro-industries on daily basis and will prepare their project report based on these observations.

Semester VIII

Experiential Learning Programme (ELP)/ Hands On Training (HOT)

This program will be undertaken by the students preferably during the eighth semester for a total duration of 24 weeks with a weightage of 0+20 credit hours. The students will register for any of two modules, listed below, of 0+10 credit hours each.

- Production Technology Bio-agents and Bio-fertilizer
- Seed Production and Technology
- Mushroom Cultivation Technology
- Soil, Plant, Water and Seed Testing
- Poultry Production Technology
- Hybrid Seed Production Technologies
- Floriculture and Landscaping
- Food Processing
- Commercial Horticulture
- Agriculture Waste Management
- Organic Production Technology
- Commercial Sericulture

In addition to these ELP modules other important modules may be given to the students by SAUs.

Indian Council of Agricultural Research has already provided financial help for establishment of two or more Experiential Learning units in different State Agricultural Universities, hence, each university is expected to plan EL program accordingly.

AGRICULTURE ENGINEERING

Student READY program of the Agricultural Engineering is proposed to have the following components:

1. Summer break after IV semester -Student READY Skill Development Training -I for five weeks in the summer break after IV semester with a credit load of 0+5 credit hours.
2. Summer break after VI semester- Student READY Skill Development Training -II for five weeks in the summer break after VI semester with a credit load of 0+5 credit hours.
3. Semester VII - Industrial attachment of 10 weeks with a credit load of 0+10 credit hours.
4. Semester VII - On campus Experiential Learning Program of 12 weeks with a credit load of 0+10 credit hours.
5. Semester VIII - Project Planning and Report Writing of 12 weeks with a weightage of 0+10 credit hours.

BIOTECHNOLOGY

The Student READY program of Biotechnology will comprise of the following three parts:

Semester VII

1. Any one of the following four modules for in-house skill development with a duration of 20 weeks carrying a weightage of 0+20 credit hours to be taken up during VII semester.
 - a. Plant Biotechnology
 - b. Animal Biotechnology
 - c. Microbial and Environmental Biotechnology
 - d. Bioinformatics

Semester VIII

1. Project Formulation, Execution and Presentation of 12 weeks duration to be taken up during VIII semester with a weightage of 0+10 credit hours.
2. Entrepreneurial Development in Biotechnology (On-campus/Off-campus) of 12 weeks duration to be taken up during VIII semester in Micro-Propagation; DNA Fingerprinting; Genetic Purity for Maintenance Breeding; Marker Assisted Selection; Haploid Production; Database Management Skills; Molecular Diagnostics; Recombinant Protein Production; Animal Cell Culture and Maintenance; Fermentation, Biopharma Production; Bioprocess Enrichment; Bioremediation; Bio-fules, etc. with a weightage of 0+10 credit hours.

DAIRY TECHNOLOGY

Summer Breaks after II, IV and VI semesters (0+10 Credit hours)

Student READY Rural Dairy Work Experience Program-I (Summer Break after II semester) of 5 weeks with credit load of 0+5 credit hours to provide exposure to the students to the areas on Milk Production & Procurement to be taken up in State Dairy Federations/Dairy Development Departments/Private Dairies/Animal Husbandry Department/Cattle farm/Progressive dairy farmers.

Student READY Rural Dairy Work Experience Program-II (Summer Break after IV semester) of 5 weeks with credit load of 0+5 credit hours for exposure on Preliminary Dairy Operations to be taken up in Experimental Dairy/Referral lab/Dairy Plants / Exposure to product manufacturing operations in Dairy & Food Industry.

Semester-VII

Student READY In-Plant Training in Seventh Semester of 24 weeks with credit load of 0+20 credit hours. Plant visits and involvement in processing and manufacturing of value added products in each Dairy Technology course to have Industrial exposure in specialized products like Market Milk, Ice Cream, Milk Powders, Cheese, By-products etc. should be made compulsory.

Semester-VIII

Student READY Experiential Learning Module of 10 weeks with a credit load of 0+10 credit hours. The module will run concurrently in the final semester along with the regular courses. This shall include development of Detailed Project Report on setting up of enterprise in the selected areas of product manufacture and Evaluation of the Module.

FISHERIES

Student READY Program will be taken up during VII and VIII semesters and will have the following components:

VII Semester

Student READY–In-plant Attachment for 12 weeks (0+10 credit hours).

Student READY–Rural Fisheries Work Experience Program for 8 weeks (0+8 credit hours).

Student READY–Study Tour (in and outside State) for 4 weeks (0+2 credit hours).

VIII Semester

Student READY Experiential Module

This will include capacity building and skill development of the students in planning, development, formulation, monitoring and evaluation of project for entrepreneurial proficiency with a total credit load of 0+20 credit hours as detailed below:

- Skill Development will have 0+5 credit hours and include Aquarium Fabrication, Analysis of Soil and Water Quality Parameters, Preparation of Fish Products or in any appropriate applied aspect of fisheries.
- For Experiential Learning Program will have 0+12 credit hours, a minimum of two out of the following areas should be decided by each university:
 - Ornamental Fish Culture
 - Seed Production
 - Trade and Export Management
 - Aqua-clinic
 - Post-Harvest Technology
 - Aqua Farming.

- Project work: Student will select relevant or interested area of specialization such as Fish pathology, Fish diagnostic, Fish pharmacology, Fish toxicology, Fish nutrition, Fish immunology, Fish genetics and breeding, Ornamental fish production, Genomics in Aquaculture, Fish stock assessment, Aquatic pollution, Fish value addition, Fish in nutrition, Fish processing waste management, Quality control and quality assurance, Fish products and by-products etc.. He/she will prepare a research project plan and it will be presented in-front of committee appointed by the Dean of the respective college. Also, for each student, one advisor will be provided, who will guide the student in completion of proposed research plan. A total of 3 credit hours will be allotted for preparation of the project and its presentation as a seminar. This exercise will prepare students interested in higher education. They will be exposed with identifications of problems in experimental setup and project preparation.

FOOD TECHNOLOGY

Student READY Program will be taken up during VII and VIII semesters and will have the following components:

Semester -VII

1. Student READY - Experiential Learning with a credit load of 0+14 credit hours through relevant pilot plants for processing of various commodities, preferably on campus. This shall include development of Detailed Project Report on setting up of an enterprise in the selected areas of product manufacture and evaluation of the module. The Experiential Learning is intended to build practical skills and entrepreneurship attributes among the students with an aim to deal with work situations and for better employability and self-employment.
2. Student READY –Project with a credit load of 0+3 credit hours to undertake investigation of selected problems of special interests in Food Processing Technology to individual student. The work includes library work, field or laboratory research, recording data, analyzing data and writing of report, etc.
3. Student READY – Seminar including preparation of synopsis, presentation and discussion by each student on current topics / interests in Food Processing Technology with weightage of 0+1credit hours.

Semester -VIII

1. Student READY –Educationl Tour of two- three weeks to various industries within and outside the state of the university and submission of report on Industrial Tour carrying a weightage of 0+2 credit hours.
2. Student READY – In-plant Training of one semester duration with a credit load of 0+20 credit hours at relevant food processing industry, machinery manufacturer, marketing or other agencies. The In-plant Training is intended to expose the students to an environment in which they are expected to be associated in their future career. The students will be required to have hands-on-experience in one or more commercial establishments.

FORESTRY

Semester -V

Student READY Experiential Learning Module – I (5 weeks) (0+5 credit hours). Any one of the modules to be taken up during V semester:

1. Production and Marketing of High Value Forest Produce (FPU)
2. Raising Quality Planting Materials for Forest Regeneration (SAF/FBT)
3. Apiculture/Sericulture (FBU/NRM/WLS)
4. Ecotourism (BSS/WLS)
5. Wild Animal Health Management– WLS

Semester-VI

Student READY Experiential Learning Module – II (5 weeks) (0+5 credit hours). Any one of the modules to be taken up during VI semester:

- Production and Marketing of High Value Forest Produce (FPU)
- Raising Quality Planting Materials for Forest Regeneration (SAF/FBT)
- Apiculture/Sericulture (FBT/NRM/WLS)
- Ecotourism (BSS/WLS)
- Wild Animal Health Management – WLS

Semester -VII

Student READY Forestry Work Experience (FOWE) 24 weeks will be taken up in semester VII with a credit load of 0+20 credit hours. The program will have the following components:

- Orientation
- Forest Range Training Program
- Industrial Placement
- Weapon Training and First-Aid Training
- Socio-economic Surveys and Village Attachment
- Socio-economic Surveys and Village Attachment
- Report Writing and Presentations

Semester -VIII

Student READY Project Work & Dissertation 10 weeks (0+10 credit hours) to be taken up during the VIII semester.

COMMUNITY SCIENCE (HOME SCIENCE)

A) B.Sc (Hons) Community Science

The Student READY program will be taken up during VII and VIII semester. The program will be divided into two parts:

Semester VII

Student READY Experiential Learning Program: the students will take up any one of the following ELP modules for a period of 24 weeks with credit load of 0+20 credit hours during the VII semester.

Module 1- Product Development and Entrepreneurship

This module aims to grant practical knowledge to students regarding product development and entrepreneurship, covering all aspects related to income generation through production and sale of clothing and textile and interior decoration products and also the management of their entrepreneurial ventures. The students will take up the work out of the topics like :

1. Apparel Designing Technique-Flat Pattern and Draping
2. Principles of Textile Designing
3. Fashion Illustrations
4. Computer Aided Designing-Pattern Designing
5. Retailing and Merchandising- Textiles and Apparel
6. Instructional Video Production
7. Public Relations and Social Marketing
8. Event Management
9. Interior Design and Decoration
10. Computer Aided Interior Designing
11. Tourism and Hospitality Management
12. Web Designing and Multimedia Production

Module 2 - Community Nutrition and Welfare

This module aims to impart practical knowledge to students regarding community welfare encompassing all the aspects *viz.* diet counseling, food preservation, food service and hospitality management, nutraceuticals and health foods, early childhood care, education and counseling for parents and community and multimedia and video production. Students would be ready to conduct and manage community welfare programs independently. The students will take up the work out of the topics like

1. Print and Electronic Journalism
2. Web Designing and Multimedia Production Marketing
3. Instructional Video Production
4. Diet and Nutrition Counseling
5. Food Preservation and Storage
6. Food Service and Hospitality Management
7. Nutraceuticals and Health Foods
8. Methods and Materials for Teaching Young Children
9. Education and Counseling for Parents and Community
10. Early Childhood Care, Education and Management
11. Sanitation & Hygiene
12. Developmental Assessment of Young Children

Semester -VIII

Student READY In-plant training / Internship / RAWE will be taken up during VIII semester for a period of 20 weeks with a credit load of 0+20 credit hours.

B) B.Sc.(Hons) Food Nutrition and Dietetics

The Student READY program will be taken up during VII and VIII semester. The program will be divided into two parts:

Semester -VII

Student READY - In-plant Training: the students will be deputed to nearby hospitals, testing labs and processing units/foods industries for a period of 20 weeks during the VII semester with a credit load of 20 credit hours. The students will be provided a platform to study at least two topics in depth depending upon place of their training. At the end of the training they will make a presentation before faculty and other students.

Semester -VIII

Student READY Hands-on-training: The students will take up Hands-on-Training program for a period of 24 weeks with a credit load of 20 credit hours during the VIII semester. The following aspects will be taken up during the training to develop competence, capability, capacity building, acquiring skill, expertise and confidence to start their own enterprise and turn job creators instead of job seekers.

1. Fruits and Vegetables: Preparation and Utilization – II
2. Nutritional Status Assessment Methods
3. Food Service Management – II
4. Diet and Nutrition Counseling
5. Special Project depending upon the regional requirement
6. Entrepreneurship Development and Business Management

HORTICULTURE

Student READY Program will be taken up during VII and VIII semesters and will have the following components:

Semester - VII

Student READY- Rural Horticulture Work Experience (RHWE) & Placement in Industries. This program will be taken up during the VII semester for a duration of 24 weeks and will be allotted 0+20 credit hours. The program will include orientation, village stay, all India study tour, industrial placement program, report writing and final examination.

Semester -VIII

Student READY Experiential Learning (Professional Package) will be for the duration of 20 weeks and will carry a weightage of 0+20 credit hours. Students can select any two modules from the following under STUDENT READY- Experiential Learning program depending on the facilities available at the college:

- Commercial Horticulture
- Protected Cultivation of High Value Horticulture Crops

- Processing of fruits and vegetables for value addition
- Floriculture and landscape architecture
- Bio-inputs: Bio-fertilizers and Bio-pesticides
- Mass multiplication of plant and molecules through tissue culture
- Mushroom culture
- Bee keeping

SERICULTURE

The Student READY program will be implemented during VII and VIII semester with the following components:

Semester - VII

STUDENT READY- Experiential Learning Program (ELP)/ Hands on Training(HOT) modules – the program will be taken up in VII semester for a period of 20 weeks carrying a weightage of 0+20 credit hours. The students can take up one of the following modules:

- Host Plant Production
- Cocoon Crop Production
- Silk Product Science
- Natural Resource Management

Semester -VIII

STUDENT READY-Rural Work Experience Program (Sericulture) will be taken up during VIII semester for a period of 24 weeks and a credit load of 20 credit hours. The students will have exposure to Placement in Grainage Technology, Seri Clinic, Placement in Silk Product Technology, Placement in Value Addition to Sericulture By-Products and Practical Extension Work in Villages

EVALUATION OF STUDENT READY PROGRAM

- Students shall be evaluated component-wise under village attachment/ agro-industrial attachment/ hands on training/skill development training/experiential learning/student projects.
- Each college of the University will designate a Student READY Program Coordinator and componentwise evaluation committees. These committees will evolve a method of evaluation depending upon the component undertaken giving due weightage to the observations made by the Scientists/Agro-industrial Officer and the Program Coordinator with whom they are attached.
- Since the credit hours allotted to the Student READY program are gradial, the minimum condition of attendance and grading system will apply for the program as will be applicable to other courses.
- It is expected that at the end of Student READY program, the students should gain competency for entrepreneurship, which should be innovative and creative in nature. The evaluation committee must ensure percentage increase in this competency at the end & successful organization of all Student READY programs.

Common Courses

It was a general consensus that students of all disciplines need to be taught the following courses:

I. Environmental Studies and Disaster Management (as per UGC guidelines-core module for under graduate courses of all branches of higher education)

Theory

Unit 1 : Multidisciplinary nature of environmental studies: definition, scope and importance

Unit 2: Natural Resources: Renewable and non-renewable resources. Natural resources and associated problems.

- a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
- b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
- e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies.
- f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. • Role of an individual and communities in conservation of natural resources. • Equitable use of resources for sustainable lifestyles.

Unit 3: Ecosystems • Concept of an ecosystem. • Structure and function of an ecosystem. • Producers, consumers and decomposers. • Energy flow

in the ecosystem. • Ecological succession. • Food chains, food webs and ecological pyramids.
• Introduction, types, characteristic features, structure and function of the following ecosystems :-

- a. Forest ecosystem
- b. Grassland ecosystem
- c. Desert ecosystem
- d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 4: Biodiversity and its conservation:- Introduction, definition, genetic, species & ecosystem diversity and biogeographical classification of India.

Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, national and local levels, India as a mega-diversity nation.

Hot-spots of biodiversity

Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India.

Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. Characterization, evaluation and utilization of agrobiodiversity.

Unit 5 : Environmental Pollution: definition, cause, effects and control measures of :-

- a. Air pollution
- b. Water pollution
- c. Soil pollution
- d. Marine pollution
- e. Noise pollution
- f. Thermal pollution
- g. Nuclear hazards.

Solid Waste Management: causes, effects and control measures of urban and industrial wastes.

Role of an individual and communities in prevention of pollution.

Pollution case studies.

Unit 6: Social Issues and the Environment:

From Unsustainable to Sustainable Development

Urban problems related to energy

Water conservation, rain water harvesting, watershed management

Environmental ethics: Issues and possible solutions, climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. dyes.

Wasteland reclamation.

Consumerism, wastage and waste products.

Environment Protection Act.

Air (Prevention and Control of Pollution) Act.
 Water (Prevention and control of Pollution) Act
 Wildlife Protection Act
 Forest Conservation Act
 Issues involved in enforcement of environmental legislation.
 Public awareness.

Unit 7: Human Population and the Environment: population growth, variation among nations, population explosion, Family Welfare Programme. Demographic patterns and impact on Agriculture

Environment and Human Health: Human Rights, Value Education, HIV/AIDS.

Women and Child Welfare.

Role of Information Technology in Environment and Human Health.

Case Studies.

Unit 8: Field work: Visit to a local area to document environmental assets river/forest/grassland/hill/mountain, visit to a local polluted site-Urban/Rural/Industrial/Agricultural, study of common plants, insects, birds and study of simple ecosystems-pond, river, hill slopes, etc.

Disaster Management

Theory

UNIT-1 :-Natural Disasters- Meaning and nature of natural disasters, their types and effects. Floods, drought, cyclone, earthquakes, landslides, avalanches, volcanic eruptions, Heat and cold waves, Climatic change: global warming, Sea level rise, ozone depletion.

UNIT-2 :-Man made disasters- Nuclear disasters, chemical disasters, biological disasters, building fire, coal fire, forest fire, field fires-burning of straw, stables and residues oil fire, air pollution, water pollution, deforestation, industrial waste water pollution, road accidents, rail accidents, air accidents, sea accidents.

UNIT-3:-Disaster Management- Effect to migrate natural disaster at national and global levels. International strategy for disaster reduction. Concept of disaster management, national disaster management framework; financial arrangements; role of NGOs, community –based organizations and media. Central, state, district and local administration; Armed forces in disaster response; Disaster response; Police and other organizations.

II. Communication Skills and Personality Development

Theory

Communication Skills: Structural and functional grammar; meaning and process of communication, verbal and nonverbal communication; listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, precise writing, summarizing, abstracting; individual and group presentations, impromptu presentation, public speaking; Group discussion. Organizing seminars and conferences.

Practical

Listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, precise writing, summarizing, abstracting; individual and group presentations.

III. Information and Communication Technology

Theory

IT and its importance. IT tools, IT-enabled services and their impact on society; computer fundamentals; hardware and software; input and output devices; word and character representation; features of machine language, assembly language, high-level language and their advantages and disadvantages; principles of programming- algorithms and flowcharts; Operating systems (OS) - definition, basic concepts, introduction to WINDOWS and LINUX Operating Systems; Local area network (LAN), Wide area network(WAN), Internet and World Wide Web, HTML and IP; Introduction to MS Office - Word, Excel, Power Point. Audio visual aids - definition, advantages, classification and choice of A.V aids; cone of experience and criteria for selection and evaluation of A.V aids; video conferencing. Communication process, Berlo' s model, feedback and barriers to communication.

Practicals

Exercises on binary number system, algorithm and flow chart; MS Word; MS Excel; MS Power Point; Internet applications: Web Browsing, Creation and operation of Email account; Analysis of fisheries data using MS Excel. Handling of audio visual equipments. Planning, preparation, presentation of posters, charts, overhead transparencies and slides. Organization of an audio visual programme.

IV. Entrepreneurship Development and Business Management

Theory

Concept of Entrepreneur, Entrepreneurship Development, Assessment of entrepreneurship skills, SWOT Analysis & achievement motivation, Entrepreneurial behavior, Government policy and plan for entrepreneurship development, Developing Leadership Skills, Encoding and decoding communication skills; Communication skills for entrepreneurship development, Developing Speaking Skills, Developing Listening Skills, Developing organizational skill, Developing Managerial skills, Problem solving skill, Supply chain management and Total quality management, Project Planning Formulation and report preparation.

V. Agri-Informatics

Theory

Introduction to Computers, Operating Systems, definition and types, Applications of MS-Office for document creation & Editing, Data presentation, interpretation and graph creation, statistical analysis, mathematical expressions, Database, concepts and types, uses of DBMS in

Agriculture, World Wide Web (www): Concepts and components. Introduction to computer programming languages, concepts and standard input/output operations.

e-Agriculture, concepts and applications, Use of ICT in Agriculture. Computer Models for understanding plant processes. IT application for computation of water and nutrient requirement of crops, Computer-controlled devices (automated systems) for Agri-input management, Smartphone Apps in Agriculture for farm advisory, e-banking markets market price, postharvest management etc; Geospatial technology for generating valuable agri-information. Decision support systems, concepts, components and applications in Agriculture, Agriculture Expert System, Soil Information Systems etc for supporting Farm decisions. Preparation of contingent crop-planning using IT tools.

Practical

Study of Computer Components, accessories, practice of important DOS Commands. Introduction of different operating systems such as windows, Unix/ Linux, Creating, Files & Folders, File Management. Use of MS-WORD and MS Power-point for creating, editing and presenting a scientific Document. MS-EXCEL - Creating a spreadsheet, use of statistical tools, writing expressions, creating graphs, analysis of scientific data. MS-ACCESS: Creating Database, preparing queries and reports, demonstration of Agri-information system. Introduction to World Wide Web (WWW). Introduction of programming languages. Hands on Crop Simulation Models (CSM) such as DSSAT/Crop-Info/CropSyst/ Wofost; Computation of water and nutrient requirements of crop using CSM and IT tools. Introduction of Geospatial Technology for generating valuable information for Agriculture. Hands on Decision Support System. Preparation of contingent crop planning. Forecasting and early warning.

VI. Economics and Marketing

Theory

Economics – Terms and definitions - Consumption, Demand and Supply. Factors of production. Gross Domestic Product – Role of Poultry Sector in National GDP – Marketing-definition – Marketing Process – Need for marketing – Role of marketing — Marketing functions – Classification of markets – Marketing of various channels – Price spread – Marketing Efficiency – Integration – Constraints in marketing of agricultural produce. Market intelligence – Basic guidelines for preparation of project reports- Bank norms – Insurance – SWOT analysis – Crisis management.

Practical

Techno-economic parameters for preparation of projects. Preparation of Bankable projects for various agricultural products and its value added products. Identification of marketing channel– Calculation of Price Spread – Identification of Market Structure – Visit to different Markets. Functioning of E-markets

The contents given above are suggestive. It was decided by the Committee these contents be adjusted in courses and credit hours as per their relevance to the concerned.

Examination and Evaluation System

Fifth Deans' Committee deliberated on the examination and evaluation system being followed by different universities. The Committee recommends Uniform Grading system to be followed with uniform OGPA requirements for award of degrees at all levels and uniform conversion formulae to be followed for declaration of I, II and III divisions, distinctions etc. Declaration of division in the degree certificate to be made compulsory by all universities:

1. Examination

- External theory (50%)
- Internal Theory + Practical (50%)
 - Courses with Theory and Practical
Mid-term Exam (30%) + Assignment (5%) in practical oriented courses + Practical (15%)
 - Courses with only Theory
Mid-term Exam (40%) + Assignment (10%)
 - Courses with only Practical:
(100%) Internal
- Paper to be set by external: HOD shall ensure the coverage of syllabus. If needed moderation can be done.
- Evaluation to be done internally by the faculty other than the Course Instructor. Syllabus of the concerned course shall be sent to the external examiner, who shall prepare the question papers. For practical, it is recommended that examination shall be conducted by course instructor(s) and one teacher nominated by HOD.

2. Evaluation

Degree	Percentage of Marks Obtained	Conversion into Points
All	100	10 Points
	90 to <100	9 to <10
	80 to <90	8 to <9
	70 to <80	7 to <8
	60 to <70	6 to <7
	50 to <60	5 to <6
	<50 (Fail)	<5
	Eg. 80.76	8.076
	43.60	4.360
	72.50 (but shortage in attendance)	Fail (1 point)

OGPA	Division
5.000 – 5.999	Pass
6.000 – 6.999	II division
7.000 – 7.999	I division
8.000 and above	I division with distinction

GPA = Total points scored / Total credits (for 1 semester)

CGPA = \sum Total points scored / Course credits

OGPA = \sum Total points scored (after excluding failure points)/ Course credits

% of Marks = OGPA x 100/10

