

Second Call for Revision and Creation of UG e-Learning Courses under NAHEP-2

Subproject - "Investments in ICAR Leadership in Agricultural Higher Education"

Introduction

Education Division undertakes planning, development, coordination and quality assurance of higher agricultural education in the country, and thus, strives for maintaining and upgrading quality and its relevance. E-Learning plays a key role in delivering the quality education in scalable and flexible manner. It is a learning system based on formalised teaching with the help of electronic resources. It is one of the most engaging ways to study today. Since the learning is conducted online, students can study at their own pace and sometimes in their own time. It allows the teachers to reach out to a larger audience of students as compared to the traditional classroom where the number of students is restricted. Thus, a large number of learners have access to learning.

Several UG level e-Courseware contents were developed in seven disciplines (viz. Agricultural Science; Fisheries Science; Dairy Science; Veterinary & Animal Husbandry; Horticulture; Home Science and Agricultural Engineering). These were developed through partnerships and efforts of the components of the ICAR-Agricultural Universities (AUs) System comprising State Agricultural Universities (SAUs), deemed to be universities (DUs), Central Agricultural University (CAU) and Central Universities (CUs) with Agriculture Faculty at SAUs and other organisations under ‘National agricultural innovation Project’.

E-Learning portal under NAHEP, Indian Council of Agricultural Research provides 24x7 services for online access to all the teachers, students and learners in the field of agricultural education. The courses then created under NAIP will be upgraded as per Fifth Dean Committee report and some new UG courses will be created under the light of NAHEP project funded by the World Bank.

Background

The mandate of ICAR/DARE includes promotion and coordination of education in agriculture, agro-forestry, animal husbandry, fisheries, home science and allied sciences in the country. ICAR, through series of efforts over years, brought about uniformity in norms and standards in academics, governance and finance management, quality and relevance of education, and policies on human resource development in the country. ICAR is now embarking upon an ambitious step in further strengthening the National Agricultural Education System in the country through National Agricultural Higher Education Project (NAHEP) with financial assistance of the World Bank by investing on infrastructure, competency and commitment of faculty, and attracting talented students to agriculture.

The Project "**Investments in ICAR Leadership in Agricultural Higher Education**" is a Component-2 NAHEP project funded by the World Bank. It belongs to the main priority area of strengthening of agricultural education system (ICAR and Agricultural Universities) in India. E-Learning activity is one of its major modules. Its major aim is to strengthen the Agricultural Higher Education in India. During Oct-Dec 2019, first open call was conducted for the creation of e-content for PG Courses.

The major objectives covered under First Open Call of the project at ICAR-IASRI are as follows:

- To develop the ICT infrastructure as technical assistance to Agricultural Universities
- To develop digital information systems for agricultural education, data collection, analysis and dissemination;
- To develop and implement next-generation management systems covering information in regard to procurement to contract management and financial management areas

Under the First Open Call, we invited applications from permanent teaching faculty of 45 agricultural universities to create 144 PG courses for establishment of E-Learning/m-learning systems through MOOC/LMS system for participating AUs is a major activity. The main objectives of E-Learning activity are:

- Revision of existing UG e-courses
- Development of e-courses for Under Graduates, Masters and PhD courses
- Deployment of e-courses on MOOC/LMS platform

Second E-Learning Call

The Second Open Call is meant for inviting the applications from permanent teaching faculty at Agricultural Universities and ICAR deemed universities/ ICAR institutes with at-least 5 years of experience in teaching/ research, for the upgradation and creation of already existing Under-Graduate e-courses. Some of the already existing courses on “e-krishishiksha” portal will be upgraded as per Fifth Dean Committee Report. The selected courses are mentioned in Annexure-IVA. For each e-course, one Content Reviser and one Course Reviewer will be selected. The syllabus for the courses is as per the prescribed UG curricula and syllabi of the Education Division, ICAR, New Delhi. In Second Open Call we also invite applications for creating new UG courses. The selected courses are mentioned in Annexure-IVB. For each Course, one Content Creator and one Reviewer will be selected.

The Course Structure and format for upgrading the eLearning content and the Honorarium is given below. Interested faculty can send their essential particulars along with the name of Courses in which they are interested, in the Application Form attached as Annexure-V, or apply online.

Course Structure and Format to be used for Upgrading/Creating E-Course Content

1. Course Name, University/College Name, Department Name

2. Lecture-wise breakup of the Course. (Around 10-15 Lectures)

3. Lecture Structure:

- Objectives of the Lecture in bullets (Atleast 2).
- Glossary of terms: 5-10 definitions of the main terms used in each Lecture.
- E-Lecture: E-Learning content of the Lecture containing the Text, Tables and labelled Pictures (The content should be more in bulleted form or small paragraphs rather than big paragraphs).
- Questions/Answers: At least 5-10 Questions (MCQ's, True/False, Fill Ups, Long answer type and short answer type) with their options and correct answers.(all the questionnaires are mandatory)
- At least 1 Assignment from each Lecture.
- A power point presentation for each Lecture of the course.
- Animations/ Explanatory Video (if any)

4. Format:

1. The e-Learning content should be created in MS-Word, using the font style: Times New Roman.
2. Title of Unit and Lectures should be Bold and in 14 pts font size.
3. The text should be written in 12 pts font size.
4. All topics under the Lecture should have a Bold Heading and a Section No. (1, 2, 3...)
5. Sub-sections should be numbered as 1.1, 1.1.1 etc.

Table.1: Honorarium and Time Duration

| | Total Unit Honorarium | Time Duration |
|---------------------------------|------------------------------|----------------------|
| Content Creator/ Reviser | Rs 15000 per Course | 1 Month |
| Course Reviewer | Rs 15000 per Course | 1 Month |

List of UG Courses to be Revised in Second Call**B.Sc (Agriculture)**

| S.No | Course |
|-------------|---|
| 1 | Livestock Production and Management |
| 2 | Weed Management |
| 3 | Statistical Methods |
| 4 | Post-harvest Management and Value Addition of Fruits and Vegetables |
| 5 | Principles of Seed Technology |
| 6 | Principles of Genetics |
| 6 | Elementary Mathematics |
| 8 | Fundamentals of Biochemistry |
| 9 | Renewable Energy |
| 10 | Agricultural Microbiology |
| 11 | Agricultural Marketing Trade and Prices |
| 12 | Agricultural Finance & Cooperation |
| 13 | Water Management Including Micro Irrigation |
| 14 | Insect Morphology and Systematics |

B.Tech (Agricultural Engineering)

| S.No | Course |
|-------------|---|
| 1 | Computer programming and Data Structures |
| 2 | Watershed Hydrology |
| 3 | Human Engineering and Safety |
| 4 | Mechanics of Tillage and Traction |
| 5 | Food Packaging Technology |
| 6 | Strength of Material |
| 7 | Engineering Chemistry |
| 8 | Electrical Machines and Power Utilization |
| 9 | Surveying and Levelling |
| 10 | Design of Structures |
| 11 | Engineering Mechanics |
| 12 | Watershed Planning and Management |
| 13 | Soil Mechanics |
| 14 | Heat and Mass Transfer |
| 15 | Engineering Physics |
| 16 | Engineering Mathematics - I |

| | |
|----|---|
| 17 | Engineering Mathematics - III |
| 18 | Applied Electronics and Instrumentation |
| 19 | Engineering Mathematics-II |
| 20 | Dairy and Food Engineering |
| 21 | Agricultural Structures and Environmental Control |
| 22 | Irrigation Engineering |
| 23 | Drainage Engineering |
| 24 | Groundwater, Wells and Pumps |
| 25 | Theory of Machines |
| 26 | Machine Design |
| 27 | Farm Machinery and Equipment |
| 28 | Farm Machinery and Equipment-II |
| 29 | Tractor Systems and Controls |

B.Tech (Dairy Technology)

| S.no | Course |
|------|--|
| 1 | Engineering Drawing |
| 2 | Thermodynamics |
| 3 | Dairy Engineering |
| 4 | Food Engineering |
| 5 | Workshop Practice |
| 6 | Heat & Mass Transfer |
| 7 | Refrigeration & Air-Conditioning |
| 8 | Material Strength & Dairy Machine Design |
| 9 | Instrumentation and Process Control |
| 10 | Dairy Process Engineering |
| 11 | Dairy Plant Design and Layout |
| 12 | Fluid Mechanics |
| 13 | Starter Cultures and Fermented Milk Products |
| 14 | Industrial Statistics |
| 15 | Milk Production Management & Dairy Development |
| 16 | Marketing Management & International Trade |

| | |
|----|--|
| 17 | Fundamentals of Dairy Extension |
| 18 | Environmental Studies |
| 19 | Communication Skills |
| 20 | Economic Analysis |
| 21 | Financial Management & Cost Accounting |
| 22 | Entrepreneurship Dev. & Ind. Consultancy |
| 23 | Fundamentals of Microbiology |
| 24 | Food and Industrial Microbiology |
| 25 | Ice-cream & Frozen Deserts |
| 26 | Market Milk |
| 27 | Food Technology-I |
| 28 | By-Products Technology |
| 29 | Food Technology-II |
| 30 | Cheese Technology |
| 31 | Fat Rich Dairy Products |
| 32 | Packaging of Dairy Products |
| 33 | Chemical Quality Assurance |
| 34 | Food Chemistry |

| | |
|----|----------------------------|
| 35 | Organic Chemistry |
| 36 | Physical Chemistry of Milk |
| 37 | Chemistry of Milk |

B.Sc (Horticulture)

| S.No | Course |
|-------------|---|
| 1 | Elementary Statistics and Computer Application |
| 2 | Introductory Crop Physiology |
| 3 | Growth and Development of Horticultural Crops |
| 4 | Medicinal and Aromatic Crops |
| 5 | Commercial Floriculture |
| 6 | Ornamental Horticulture |
| 7 | Principles of Plant Breeding |
| 8 | Plantation Crops |
| 9 | Tropical and Subtropical Fruits |
| 10 | Breeding of Fruit And Plantation Crops |
| 11 | Seed Production of Vegetable, Tuber and Spice Crops |
| 12 | Fundamentals of Horticulture |
| 13 | Weed Management in Horticultural Crops |

| | |
|----|---|
| 14 | Temperate Fruit |
| 15 | Water Management in Horticultural Crops |
| 16 | Farm Power and Machinery |
| 17 | Fundamentals of Soil Science |
| 18 | Introductory Agro-Forestry |
| 19 | Introduction to Major Field Crops |
| 20 | Organic Farming |
| 21 | Soil Fertility and Nutrient Management |
| 22 | Fundamentals of Entomology |
| 23 | Fundamentals of Plant Pathology |
| 24 | Insect Pests of Vegetable, Ornamental and Spice Crops |
| 25 | Insect Pests of Fruit, Plantation, Medicinal and Aromatic Crops |
| 26 | Diseases of Fruit, Plantation and Medicinal and Aromatic Crops |
| 27 | Diseases of Vegetable, Ornamental and Spice Crops |
| 28 | Nematode Pests of Horticultural Crops and Their Management |
| 29 | Fundamentals of Food Technology |
| 30 | Fundamentals of Extension Education |
| 31 | Horti-Business Management |
| 32 | Spices and Condiments |

| | |
|----|---|
| 33 | Potato and Tuber Crops |
| 34 | Tropical and Subtropical Vegetable Crops |
| 35 | Breeding of Vegetable & Tuber and Spice Crops |

B.F.Sc (Fisheries)

| S.No | Course |
|-------------|---|
| 1 | Freshwater Aquaculture |
| 2 | Genetics and Breeding |
| 3 | Ornamental Fish Production and Management |
| 4 | Principles of Aquaculture |
| 5 | Coastal Aquaculture and Mariculture |
| 6 | Fish Nutrition and Feed Technology |
| 7 | Marine Biology |
| 8 | Oceanography |
| 9 | Limnology |
| 10 | Soil and Water Chemistry |
| 11 | Freezing Technology |
| 12 | Refrigeration and Equipment Engineering |

| | |
|----|---|
| 13 | Fishing Craft Technology |
| 14 | Aquaculture Engineering |
| 15 | Fisheries Economics |
| 16 | Fisheries Extension Education |
| 17 | Information and Communication Technology |
| 18 | Statistical Methods |
| 19 | Fish Population Dynamics and Stock Assessment |
| 20 | Physiology of Finfish and Shellfish |
| 21 | Taxonomy of Finfish |
| 22 | Fish Immunology |
| 23 | Taxonomy of Shellfish |
| 24 | Inland Fisheries |

B.V.Sc (Veterinary Sciences)

| S.No | Course |
|------|---|
| 1 | Abattoir Practices and Animal Products Technology |
| 2 | Meat Science |
| 3 | Milk & Milk Products Technology |
| 4 | General Veterinary Biochemistry |
| 5 | Animal Biotechnology |
| 6 | General Veterinary Parasitology and Helminthology |
| 7 | Livestock Entrepreneurship |
| 8 | Principles of Animal Nutrition and Feed Technology |
| 9 | Regional Veterinary Surgery |
| 10 | Principles & Techniques of Veterinary & AH Extension |
| 11 | Veterinary Clinical Medicine-I |
| 12 | Veterinarian in Society |
| 13 | Zoo/Wild Animal Breeding, Management, Nutrition And Health Care |
| 14 | Animal Welfare and Ethics and Jurisprudence |
| 15 | Veterinary Preventive Medicine-II |

| | |
|----|---|
| 16 | Veterinary Gynaecology |
| 17 | Veterinary Obstetrics |
| 18 | Veterinary Clinical Biochemistry Lab Diagnosis-II |
| 19 | Veterinary Andrology and Reproductive Techniques |
| 20 | Veterinary Physiology – I |
| 21 | Veterinary Neuropharmacology |
| 22 | Veterinary Clinical Biochemistry Lab Diagnosis-I |
| 23 | General & Systemic Veterinary Pharmacology |
| 24 | Veterinary Gross Anatomy-II |
| 25 | Veterinary Splanchnology and Applied Anatomy |
| 26 | Veterinary Gross Anatomy – I |
| 27 | Veterinary Histology and Embryology |
| 28 | Systematic Veterinary Virology |
| 29 | Systematic Veterinary Bacteriology and Mycology |
| 30 | Veterinary Immunology & Scrology |
| 31 | General Veterinary Microbiology |
| 32 | Fodder Production and Grassland Management |
| 33 | Diversified Poultry Production and Current Concepts In Poultry Management and Marketing |

| | |
|----|---|
| 34 | Environment & Environmental Hygiene |
| 35 | Commercial Poultry Production & Hatchery Management |
| 36 | Veterinary Epidemiology and Zoonosis |
| 37 | Avian Production Management |
| 38 | Veterinary Entomology and Acarology |
| 39 | Livestock and Poultry Breeding |
| 40 | Principles Of Animal Genetics and Population Genetics |
| 41 | Special Veterinary Pathology |
| 42 | General Veterinary Pathology |
| 43 | Aquatic Animal Diseases Health Care & Management |
| 44 | Avian Pathology |

B.Sc (Home Science)

| S.No | Course |
|------|--|
| 1 | Developmental Assessment of Young Children |
| 2 | Food Toxicology |
| 3 | Food Preservation and Storage |
| 4 | Community Nutrition |
| 5 | Food Science and Processing |
| 6 | Normal and Therapeutic Nutrition |
| 7 | Food Standards and Quality Control |
| 8 | Housing and Space Management |
| 9 | Project Management |
| 10 | Computer Aided Interior Design |
| 11 | Instructional Video Production |
| 12 | Women In Agriculture |
| 13 | Public Relations and Social Marketing |
| 14 | Fashion Illustrations |
| 15 | Fundamentals of Clothing Construction |
| 16 | Introduction to Clinical Nutrition ~Clinical Nutrition |

List of UG Courses to be Created in Second Call**B.Sc (Agriculture)**

| S.No | Courses |
|-------------|---|
| 1. | Introductory Agro meteorology& Climate Change |
| 2. | Principles of Organic Farming |
| 3. | Farm Management, Production & Resource Economics |
| 4. | Problematic Soils and Their Management |
| 5. | Communication Skills and Personality Development |
| 6. | Environmental Studies and Disaster Management |
| 7. | Introduction to Forestry |
| 8. | Intellectual Property Rights |
| 9. | Commercial Plant Breeding |
| 10. | Food Safety and Standards |
| 11. | Geoinformatics and Nanotechnology and Precision Farming |

B.F.Sc (Fisheries Science)

| S.No | Courses |
|-------------|--|
| 1 | Fisheries Business Management and Entrepreneurship Development |
| 2 | Fish Food Organisms |
| 3 | Therapeutics in Aquaculture |
| 4 | Aquatic Ecology, Biodiversity and Disaster Management |
| 5 | Fish Canning Technology |
| 6 | Fish Products and Value Addition |
| 7 | Fish By-Products and Waste Utilization |
| 8 | Quality Assurance of Fish and Fishery Products |
| 9 | Navigation and Seamanship |
| 10 | Fisheries Policy and Law |
| 11 | Fisheries Co-operatives and Marketing |

B.Tech (Agricultural Engineering)

| S.No | Courses |
|------|--|
| 1 | Building Construction and Cost Estimation |
| 2 | Thermodynamics, Refrigeration and Air Conditioning |
| 3 | Theory of Machines |
| 4 | Web Designing and Internet Applications |
| 5 | Artificial Intelligence |
| 6 | Environmental Science and Disaster Management |
| 7 | Sprinkler and Micro Irrigation Systems |
| 8 | Engineering Properties of Agricultural Produce |
| 9 | Bio-energy Systems: Design and Applications |
| 10 | Remote Sensing and GIS Applications |
| 11 | Management of Canal Irrigation System |
| 12 | Plastic Applications in Agriculture |
| 13 | Precision Farming Techniques for Protected Cultivation |
| 14 | Water Quality and Management Measures |
| 15 | Mechatronics |

B.Sc (Home Science)

| S.No | Courses |
|------|--|
| 1 | Diffusion and Adoption of Homestead Technologies |
| 2 | Textile Science and Fabric Care |
| 3 | Techniques of Fabric Construction |
| 4 | Ergonomics and Appropriate Technologies |
| 5 | Food and Nutrition Policy and Agriculture |
| 6 | Marriage and Family Dynamics |
| 7 | Elementary Statistics |
| 8 | Technical Writing (English) |
| 9 | Introduction to rural sociology |

B.Tech (Dairy Technology)

| S.No | Courses |
|-------------|---|
| 1 | Energy Conservation and Management |
| 2 | Quality and Safety Monitoring in Dairy Industry |
| 3 | Microbiology of Fluid Milk |
| 4 | ICT in Dairy Industry and Introduction to Operations Research |
| 5 | Nutraceuticals and Functional Foods |
| 6 | Emerging Dairy Processing Technologies |

B.Sc (Horticulture)

| S.No | Courses |
|-------------|--|
| 1 | Dryland Horticulture |
| 2 | Precision Farming and Protected Cultivation |
| 3 | Apiculture, Sericulture and Lac Culture |
| 4 | Agro-meteorology and Climate Change |
| 5 | Entrepreneurship Development & Business Management |

Application Form
Second Open Call for Inviting the Proposals from Faculty / Researchers
for e-Learning Content Revision /Creation
under
NAHEP Project "Investments in ICAR Leadership in Agricultural Higher Education"

| | | |
|---|-----------------|--|
| Full Name (in block letters) | | |
| Discipline | | |
| Designation | | |
| Name of ICAR Institute/ Agricultural University/ College | | |
| Address For Correspondence | | |
| Email Address | | |
| | Official | |
| | Mobile | |
| Gender (Male/Female) | | |
| Applying as Reviser /Reviewer/Creator | | |
| Whether Faculty in the Discipline or Not | | |
| Teaching / Research Experience (No. of years) | | |
| Experience of Digital Content Creation (If any) | | |
| If Yes, Number and Names of E-Course's developed | 1. | |

| | | | | |
|---|-------------------|-------------|--------------|-------------------|
| | | 2 | | |
| Name and Discipline of E-Course for Re vision / Creation | | | | |
| Educational Qualifications | | | | |
| Degree | Discipline | Year | Class | University |
| Ph.D. | | | | |
| Masters | | | | |

Signature of the Applicant

Date

Place

Recommended By the Dean and Nodal Officer (NAHEP-Component2A) of the Institute/University

Signature

Designation

Address

Date