



**CENTRE FOR AGRICULTURAL MARKET INTELLIGENCE  
UNDER NAHEP-CAAST  
INTERNATIONAL AGRIBUSINESS MANAGEMENT INSTITUTE  
ANAND AGRICULTURAL UNIVERSITY, ANAND – 388110**



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**Read:** Resolution of 58<sup>th</sup> meeting of the Academic Council, held on 12/08/2022 of Anand Agricultural University, Anand vide Item No. 58.33

**Certificate Courses to be conducted in Online and Offline mode at CAMI,  
IABMI, AAU, Anand**

**Notification**

It is hereby notified to all concerned that vide Item No. 58.33 of the 58<sup>th</sup> meeting held on 12/08/2022, the Academic Council of the Anand Agricultural University, Anand has resolved as under:

“It is hereby resolved that, for strengthening the faculties, PG students, and other stakeholders, the guideline for courses and experts (APPENDIX-I & II) and syllabi for six online or offline certificate courses (APPENDIX-III, IV, V, VI, VII, VIII) to be offered by Centre for Agricultural Market Intelligence, IABMI, AAU, Anand are approved from academic year 2022-23.”

No. AAU/IABMI/NAHEP-CAAST/ 454-457 /2022  
Date: 22/09/2022

  
Principal & Dean

**Copy F.W. Cs.to:**

1. P.S. to Hon'ble Vice Chancellor, Anand Agricultural University, Anand
2. All Members of Academic Council of this University
3. All Officers of this University
4. Registrar, AAU, Anand

**Copy to:**

1. All Principal/Dean of this University
2. Office of Registrar Examination and Academic Branch (10 Copies)

**Centre for Agricultural Market Intelligence**  
**under NAHEP-CAAST**  
**Anand Agricultural University, Anand**

**Guidelines for Online and Offline Certificate Courses**

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**1) Courses:**

Centre for Agricultural Market Intelligence, NAHEP-CAAST, Anand Agricultural University, Anand shall offer various online and offline certificate courses as a part of Human Capacity Building. The courses will be of 4 to 12 weeks (5 days to 12 days) duration. The tentative Title and Duration of courses are as follows:

Sr. No.	Title of the Course and Mode	Minimum Duration	
		Once in a week (Online/ Offline)	Continuous (except public holidays) (Offline)
1.	Data Analytics using Python	12 Weeks	10 to 12 Days
2.	Statistical Analysis using R Software	12 Weeks	10 to 12 Days
3.	Statistical Analysis using SPSS Software	12 Weeks	10 to 12 Days
4.	e-Content Development using Multimedia	12 Weeks	10 to 12 Days
5.	Agricultural Market Intelligence	12 Weeks	10 to 12 Days
6.	Agricultural Insurance	4 Weeks	5 Days

**2) Who should attend the courses:**

- Post graduate students of Agriculture and allied disciplines
- Faculties/Scientists of State Agricultural Universities, ICAR, Industries and Deemed Agricultural Universities
- Professionals of State Department of Agriculture/ Horticulture/ Animal Husbandry and allied disciplines
- Agriculture Marketing and Cooperation Professionals

**3) How to apply:**

- Advertisement/Brochure for each course will be issued well in advance on Anand Agricultural University and NAHEP-CAAST, AAU websites and other appropriate media along-with the details such as objectives, course contents, schedule, maximum seats available, mode of conduct, resource persons, evaluation criteria and selection criteria, etc.
- The date of commencement, the last date for accepting the applications, and the application mode will be provided in the brochure and website.
- The participants should apply online through the [www.aau.in](http://www.aau.in) and [nahep-caast.aau.in](http://nahep-caast.aau.in) website by accessing the link.
- The candidate should check the eligibility and apply with the necessary documents. Once candidate will apply for any course, they will not allow changing the submitted information.

#### **4) Selection Criteria:**

The candidates applying for online and offline certificate courses are advised to confirm their minimum eligibility before applying for the course. The eligible candidates should apply online. Necessary documents for eligibility of candidates should be submitted at the time of online registration. The selection of the eligible candidates for certificate course/s is purely based on the first-come-first serve basis until the requisite number of seats is filled.

The final authority of eligibility of candidates will be decided by Course Coordinator as per necessary documents submitted by candidates and reserved seats for faculties, PG students and others. The selected candidates will be notified through the designated website/ email only.

#### **5) No. of seats:**

Maximum no. of seats for each certificate course: 30 to 100 seats

The Principal Investigator, Centre for Agricultural Market Intelligence, NAHEP-CAAST, AAU reserves the right to conduct or cancel the courses depending on the required number of applications from the interested candidates.

#### **6) Registration Fee and Accommodation:**

No registration fee is to be paid.

No boarding and lodging facility will be provided for online courses and for offline courses facility will be provided as per availability.

#### **7) Platform for the Certificate course:**

Certificate course/s will be held on online web portal managed by Centre for Agricultural Market Intelligence, NAHEP-CAAST, AAU, Anand. If an interaction meeting or discussion with the resource persons and candidates is required, an online session will be held on Zoom or Google Meet or similar online platform.

Offline certificate course/s will be held at Centre for Agricultural Market Intelligence, NAHEP-CAAST, AAU, Anand.

#### **8) Evaluation**

##### **A) Pre and Post Evaluation:**

Pre and post certificate course evaluation will be carried out to evaluate the impact of the certificate course.

##### **B) Evaluation and Feedback:**

There will be evaluation of the candidates at the end of each day, and final evaluation at the end of the course. The evaluation will be in the form of Quiz/ Assignment. Based on the attendance and evaluation performance, the certificate will be issued to the participants. The criteria of attendance, Quiz and Feedback will be given with the brochure of the specific program (Average 50% in Quiz and 100% Feedback forms and assignment submitted).

#### **9) Moderator/Facilitator:**

One or more scientists/ faculties/ staff from NAHEP-CAAST, AAU, Anand will be the moderator(s) or facilitator(s) or (in-charge) or as Course Director (s)/ Course Co-coordinator (s) for each course.

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**Centre for Agricultural Market Intelligence**  
**under NAHEP-CAAST**  
**Anand Agricultural University, Anand**

**Guidelines for Experts for Online and Offline Certificate Courses**

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**Resource Persons shall submit following documents/ information for online certificate course/s**

1. In online mode and as per instruction given by Course Coordinator, Resource Persons will record their lectures by online mode on ZOOM platform up to 45 to 60 minutes. Technical assistance and zoom meeting ID will be provided well before time. In offline mode, Resource Persons will deliver lecture up to 60 minutes.
2. Study material inclusive of theory as well as practical and above material will be used for different training programs under NAHEP-CAAST, AAU, Anand.
3. Power Point Presentation and PDF copy of every lecture
4. 20 MCQs per lecture for conducting Quiz for every session and/or assignment.
5. Relevant examples with solutions for monthly Assignments
6. During the online course, if any query is raised by participants, concerned faculty will discuss with the resource persons and resolve the same through portal.
7. Remuneration to be provided as per NAHEP guidelines is as follows:

Sr. No.	Activities/ Details
	Lecture (with video recording)
1.	<ul style="list-style-type: none"> <li>➤ Rs. 5000 per lecture for Industry leaders/ MNC executives</li> <li>➤ Rs. 4000 per lecture for Professors/ Associate Professor Rank</li> <li>➤ Rs. 3000 per lecture for Assistant Professor and its equivalents</li> </ul>

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## Centre for Agricultural Market Intelligence

### under NAHEP-CAAST

### Anand Agricultural University, Anand

## Certificate Course on Data Analytics using Python

### Course Outline :

This course includes examples of analytics in a wide variety of domain and we hope that participants will learn how one can use analytics in their research area, career and life. One of the most important aspects of this course is that hands-on experience creating analytics models will be shared.

### Course Summary :

Course No.	:	NAHEPAAU01
Course Level	:	Beginner
Course Duration	:	12 Weeks (One day per week)
Course Eligibility	:	Any Postgraduate / Faculties / Working Professionals from Academic and Research Organizations
Course Fees	:	Free

### Course Plan :

Week – 1 : Introduction to Python Programming

Week – 2 : Working with Python

Week – 3 : Introduction to Data Analysis and Probability

Week – 4 : Sampling Distributions

Week – 5 : Hypothesis Testing

Week – 6 : Design of Experiment

Week – 7 : Linear and Multiple Linear Regression

Week – 8 : Maximum Likelihood Estimation and Logistic Regression

Week – 9 : Principal Component Analysis and Factor Analysis

Week – 10 : Cluster Analysis

Week – 11 : Classification and Regression Tree (CART)

Week – 12 : Artificial Neural Network (ANN)

## **Detail Course Contents :**

### **Week – 1 : Introduction to Python Programming**

- Introduction to Python Programming
- Working with Python Programming
- Python Operators
- Python Functions

### **Week – 2 : Working with Python**

- Decision Making Statements and Looping in Python
- Python Data Structure
- Introduction to Python Libraries
- Data Visualization

### **Week – 3 : Introduction to Data Analysis and Probability**

- Fundamentals of Data Analysis - I
- Fundamentals of Data Analysis - II
- Probability Distribution
- Practical Session on Probability Distribution

### **Week – 4 : Sampling Distributions**

- Fundamentals of Sampling Techniques
- Distribution of Sample Means and Variance
- Interval Estimation
- Practical Session on Sampling Distribution

### **Week – 5 : Hypothesis Testing**

- Fundamentals of Hypothesis Testing
- Hypothesis Testing - I (t and Z Test)
- Hypothesis Testing - II (F and Chi Square Test)
- Practical Session on Hypothesis Testing

### **Week – 6 : Design of Experiment**

- Fundamentals of Design of Experiment
- Types of Design of Experiment
- ANOVA Test
- Practical Session on ANOVA

### **Week – 7 : Linear and Multiple Linear Regression**

- Linear Regression
- Multiple Linear Regression
- Practical Session on Linear Regression
- Practical Session on Multiple Linear Regression

### **Week – 8 : Maximum Likelihood Estimation and Logistic Regression**

- Maximum Likelihood Estimation (MLE)
- Logistic Regression
- Practical Session on MLE
- Practical Session on Logistic Regression

### **Week – 9 : Principal Component Analysis and Factor Analysis**

- Principal Component Analysis (PCA)
- Practical Session on PCA
- Factor Analysis
- Practical Session on Factor Analysis

### **Week – 10 : Cluster Analysis**

- Cluster Analysis
- Hierarchical of Cluster Analysis
- Non-Hierarchical of Cluster Analysis
- Practical Session on Cluster Analysis

### **Week – 11 : Classification and Regression Tree (CART)**

- Classification and Regression Tree
- Decision Tree and Random Forest Algorithms
- Practical Session on Decision Tree
- Practical Session on Random Forest

### **Week – 12 : Artificial Neural Network (ANN)**

- Fundamentals of Artificial Neural Network (ANN)
- Learning Algorithms
- Weight Adjustment Algorithms
- Practical Session on ANN



## Centre for Agricultural Market Intelligence

### under NAHEP-CAAST

### Anand Agricultural University, Anand

## Certificate Course on Statistical Methods using R Software

### Course Outline :

This course includes examples of analytics in a wide variety of domain and we hope that participants will learn how one can use analytics in their research area, career and life. One of the most important aspects of this course is that hands-on experience creating analytics models will be shared.

### Course Summary :

Course No.	:	NAHEPAAU02
Course Level	:	Beginner
Course Duration	:	12 Weeks (One day per week)
Course Eligibility	:	Any Postgraduate / Faculties / Working Professionals from Academic and Research Organizations
Course Fees	:	Free

### Course Plan:

- Week – 01: Introduction to R and RStudio
- Week – 02: Working with R Programming
- Week – 03: Descriptive Analytics and Probability Distributions Using R
- Week – 04: Sampling Distributions
- Week – 05: Hypothesis Testing Using R
- Week – 06: Non-parametric and Chi-square Test Using R
- Week – 07: Design of Experiment Using R
- Week – 08: Simple Linear and Multiple Linear Regression Using R
- Week – 09: Maximum Likelihood Estimation and Logistic Regression Using R
- Week – 10: Principal Component Analysis and Factor Analysis Using R
- Week – 11: Cluster Analysis Using R
- Week – 12: Classification and Regression Tree (CART) Using R



## **Detail Course Contents:**

### **Week – 1: Introduction to R Programming and RStudio**

- Introduction to R Programming and RStudio
- Introduction to R Packages (installation, loading)
- Data Types and Data Structures in R Programming
- Operators in R Programming

### **Week – 2: Working with R Programming**

- Control Structures in R Programming
- Built-in Functions in R, User-defined Functions
- Data Importing and Data Handling in R
- Data Visualization Using ggplot2

### **Week – 3: Descriptive Analytics and Probability Distributions Using R**

- Descriptive Analytics-Using R
- Practical Session on Descriptive Analytics
- Probability Distribution Using R
- Practical Session on Probability Distribution

### **Week – 4: Sampling Distributions Using R**

- Fundamentals of Sampling Techniques
- Distribution of Sample Means and Variance
- Interval Estimation Using R
- Practical Session on Sampling Distribution

### **Week – 5: Hypothesis Testing Using R**

- Fundamentals of Hypothesis Testing
- Hypothesis Testing - I Using R
- Hypothesis Testing - II Using R
- Practical Session on Hypothesis Testing

### **Week – 6: Non-parametric Tests Using R**

- Non-parametric Tests Using R
- Chi-square test of Association and Goodness of Fit
- Practical Session on Non-parametric Test
- Practical Session on Chi-square Test

### **Week – 7: Design of Experiment Using R**

- Fundamentals of Design of Experiment
- Types of Design of Experiment
- ANOVA Using R
- Practical Session on ANOVA

### **Week – 8: Simple Linear and Multiple Linear Regression Using R**

- Simple Linear Regression Using R
- Multiple Linear Regression Using R
- Practical Session on Simple Linear Regression
- Practical Session on Multiple Linear Regression

### **Week – 9: Maximum Likelihood Estimation and Logistic Regression Using R**

- Maximum Likelihood Estimation (MLE) Using R
- Logistic Regression Using R
- Practical Session on MLE
- Practical Session on Logistic Regression

### **Week – 10: Principal Component Analysis and Factor Analysis Using R**

- Principal Component Analysis (PCA) Using R
- Practical Session on PCA
- Factor Analysis Using R
- Practical Session on Factor Analysis

### **Week – 11: Cluster Analysis Using R**

- Cluster Analysis Using R
- Hierarchical of Cluster Analysis Using R
- Non-Hierarchical of Cluster Analysis Using R
- Practical Session on Cluster Analysis

### **Week – 12: Classification and Regression Tree (CART) Using R**

- Classification and Regression Tree Using R
- Decision Tree and Random Forest Algorithms Using R
- Practical Session on Decision Tree
- Practical Session on Random Forest



## Centre for Agricultural Market Intelligence

### under NAHEP-CAAST

### Anand Agricultural University, Anand

## Certificate Course on Statistical Methods using SPSS Software

### Course Outline :

This course includes examples of analytics in a wide variety of domain and we hope that participants will learn how one can use analytics in their research area, career and life. One of the most important aspects of this course is that hands-on experience creating analytics models will be shared.

### Course Summary :

Course No.	:	NAHEPAAU03
Course Level	:	Beginner
Course Duration	:	12 Weeks (One day per week)
Course Eligibility	:	Any Postgraduate / Faculties / Working Professionals from Academic and Research Organizations
Course Fees	:	Free

### Course Plan:

Week – 01: Introduction to IBM SPSS

Week – 02: Exploratory Data Analysis Using SPSS

Week – 03: Descriptive Analytics and Probability Distributions Using SPSS

Week – 04: Hypothesis Testing Using SPSS

Week – 05: Non-parametric and Chi-square Test Using SPSS

Week – 06: Design of Experiment Using SPSS

Week – 07: Simple Linear and Multiple Linear Regression Using SPSS

Week – 08: Logistic Regression Using SPSS

Week – 09: Principal Component Analysis and Factor Analysis Using SPSS

Week – 10: Discriminant Analysis Using SPSS

Week – 11: Cluster Analysis Using SPSS

Week – 12: Decision Tree and KNN Using SPSS

## **Detail Course Contents:**

### **Week – 1: Introduction to SPSS**

- Introduction to SPSS
- Types of Data, Creating SPSS Data file
- Inserting Cases, Inserting Variables, Sorting cases, etc.
- Data Management in SPSS (Split Files, Select cases, etc.)

### **Week – 2: Exploratory Data Analysis Using SPSS**

- Recoding, Transforming and Computing variables in SPSS
- Exploratory Data Analysis Using SPSS
- Practical Session on EDA

### **Week – 3: Descriptive Analytics and Probability Distributions Using SPSS**

- Descriptive Analytics-Using SPSS (Frequencies, Descriptive Statistics, Explore, Crosstab)
- Practical Session on Descriptive Analytics
- Probability Distribution Using SPSS
- Practical Session on Probability Distribution

### **Week – 4: Hypothesis Testing Using SPSS**

- Fundamentals of Hypothesis Testing
- Hypothesis Testing - I Using SPSS
- Hypothesis Testing - II Using SPSS
- Practical Session on Hypothesis Testing

### **Week – 5: Non-parametric Tests Using SPSS**

- Non-parametric Tests Using SPSS
- Practical Session on Non-parametric Test
- Chi-square test of Association and Goodness of Fit Using SPSS
- Practical Session on Chi-square Test

### **Week – 6: Design of Experiment Using SPSS**

- Fundamentals of Design of Experiment
- Types of Design of Experiment
- ANOVA Using SPSS
- Practical Session on ANOVA

### **Week – 7: Simple Linear and Multiple Linear Regression Using SPSS**

- Simple Linear Regression Using SPSS
- Multiple Linear Regression Using SPSS
- Practical Session on Simple Linear Regression
- Practical Session on Multiple Linear Regression

### **Week – 8: Logistic Regression Using R**

- Binary Logistic Regression Using SPSS
- Ordinal Logistic Regression Using SPSS
- Multinomial Logistic Regression Using SPSS
- Practical Session on Logistic Regression

### **Week – 9: Principal Component Analysis and Factor Analysis Using R**

- Principal Component Analysis (PCA) Using SPSS
- Practical Session on PCA
- Factor Analysis Using SPSS
- Practical Session on Factor Analysis

### **Week – 10: Discriminant Analysis Using SPSS**

- Discriminant Analysis
- Linear Discriminant Analysis
- Practical Session on Discriminant Analysis

### **Week – 11: Cluster Analysis Using SPSS**

- K-mean Cluster Analysis Using SPSS
- Practical Session of K-mean Clustering
- Hierarchical of Cluster Analysis Using SPSS
- Practical Session on Hierarchical of Clustering

### **Week – 12: Decision Tree and KNN Using SPSS**

- Decision Tree Using SPSS
- Practical Session on Decision Tree
- K Nearest Neighbor Using SPSS
- Practical Session on KNN



**Centre for Agricultural Market Intelligence  
under NAHEP-CAAST**

**Anand Agricultural University, Anand**

**Certificate Course on e-content development using multimedia**

**Course Outline :**

This course on E-content development using multimedia is meant to understand the meaning and standards of E-content, learning objects, designing and development of digital resources for teaching and learning. One of the most important aspects of this course is that hands-on experience creating e-content development using multimedia will be shared.

**Course Summary :**

<b>Course No.</b>	:	NAHEPAAU04
<b>Course Level</b>	:	Beginner
<b>Course Duration</b>	:	12 Weeks
<b>Course Eligibility</b>	:	Any Postgraduate / Faculties / Working Professionals from Academic and Research Organizations
<b>Course Fees</b>	:	Free

**Course Plan :**

Week – 1 : Introduction to e-content

Week – 2 : Content Authoring Tools for multimedia

Week – 3 : Graphics (Photoshop)

Week – 4 : Graphics (Photoshop)

Week – 5 : Animation (Flash)

Week – 6 : Animation (Flash)

Week – 7: Vector Graphics (Inkscape)

Week – 8 : Audio and Podcasting (Audacity)

Week – 9 : Digital video production (OBS studio)

Week – 10 : Digital video editing (Natron / After effect)

Week – 11 : Digital video editing (Lightworks / Premiere pro)

Week – 12 : Digital video editing (Lightworks / Premiere pro)

## **Detail Course Contents :**

### **Week – 1 : Introduction to e-content**

- E-content important
- Phases of E-content development
- E-content development in education, research and extension
- Types of e-content

### **Week – 2 : Content Authoring Tools for multimedia**

- Introduction to image-manipulation tool
- Introduction to Animation tool
- Introduction to Audio tool
- Introduction to Video tool

### **Week – 3 : Graphics (Photoshop)**

- Open and import images, Selection techniques
- Working with layers, Image Editing and Retouching
- Practical Session on selection techniques and layers
- Practical Session on image Editing and Retouching

### **Week – 4 : Graphics (Photoshop)**

- Working with type, Effects and Filters for images.
- Composition and design techniques, Masking and Animation, Saving and Exporting
- Practical Session on type, effects and filters
- Practical Session on composition and design techniques

### **Week – 5 : Animation (Flash)**

- Manage document, import artwork , Time line and animation
- Creating motion, classic and shape tweens, creating transition effects
- Practical Session on time line and animation
- Practical Session on motion, classic and shape tweens, transition effects

### **Week – 6 : Animation (Flash)**

- Add text, video and sound in timeline
- Adding actions to a frame, creating and using Button symbols.
- Practical Session on text, video and Sound in timeline
- Practical Session on action script

### **Week – 7: Vector Graphics (Inkscape)**

- Object creation and manipulation with fill and stroke
- Create vector graphics, logo, icon in 2D and 3D, export of SVG and PNG format.
- Practical Session on object creation and manipulation with fill and stroke
- Practical Session on vector graphics, logo, icon and export

### **Week – 8 : Audio and Podcasting (Audacity)**

- Recording and editing audio files , mixing voice with background music
- Recording multi-track overdubs and voice makeover with effects
- Practical Session on recording and editing audio files , mixing Voice
- Practical Session on recording multi-track overdubs and voice makeover

### **Week – 9 : Digital video production (OBS studio)**

- Create digital footages using digital camera or smart mobile phone with lighting setup.
- Real time Video/audio capturing and mixing with OBS studio.
- Practical Session on digital footages with lighting setup
- Practical Session on OBS studio.

### **Week – 10 : Digital video editing (Natron / Aftereffect)**

- Introduction to composition and manage project
- Working with different node to create final composition.
- Practical Session on composition and manage project
- Practical Session on working with different node

### **Week – 11 : Digital video editing (Lightworks / Premiere pro)**

- Create project and manage clips with cue markers
- Working with sub clip and sequence
- Practical Session on project and manage clips with cue markers
- Practical Session on sub clip and sequence

### **Week – 12 : Digital video editing (Lightworks / Premiere pro)**

- video editing with timeline
- Import audio and apply different effect on timeline to produce movie clip.
- Practical Session on video editing with timeline
- Practical Session on produce movie clip with audio and effect.





## Centre for Agricultural Market Intelligence

under NAHEP-CAAST

Anand Agricultural University, Anand

### Certificate Course on Agricultural Market Intelligence

#### Course Outline :

The course includes different concept and analytics of Market Intelligence in the broad area of agriculture and its allied sectors. The course includes the analysis of market integration, price forecast and its validation, demand & supply, total factor productivity as well as global intelligence and commodity futures trading. The participants will learn different aspects of agricultural market intelligence and its applications.

#### Course Summary :

Course No.	:	NAHEPAAU05
Course Level	:	Beginner/ New
Course Duration	:	12 Weeks (One day per week)
Course Eligibility	:	Any Postgraduate / Faculties / Working Professionals from Academic and Research Organizations
Course Fees	:	Free

#### Course Plan :

Week – 1 : Basics of Agricultural Marketing and Agribusiness- I

Week – 2 : Basics of Agricultural Marketing and Agribusiness- II

Week – 3 : Concept of Market Intelligence

Week – 4 : History of Agricultural Market Intelligence

Week – 5 : Market Integration Analysis- I

Week – 6 : Market Integration Analysis- II

Week – 7 : Market Integration Analysis- III

Week – 8 : Price Forecasting- Basics

Week – 9 : Price Forecasting Methodology and Validation

Week – 10 : Demand & Supply Analysis and TFP

Week – 11 : Global Intelligence

Week – 12 : Commodity Futures Trading

## **Detail Course Contents :**

### **Week – 1 : Basics of Agricultural Marketing and Agribusiness- I**

- Basics of Agricultural Marketing and Agribusiness- Concepts and definition- its new role. Importance and scope,
- Market and market structure

### **Week – 2 : Basics of Agricultural Marketing and Agribusiness- II**

- Market intermediaries and their role -Need for regulation in the present context
- Market efficiency, costs, margins and price spread, APMC/regulated markets

### **Week – 3 : Concept of Market Intelligence**

- Concept of Market Intelligence

### **Week – 4 : History of Agricultural Market Intelligence**

- History of Agricultural Market Intelligence-USDA, FAO, DEMIC, NIAP
- Agricultural Market intelligence Network in Maharashtra State, CAMI etc.

### **Week – 5 : Market Integration Analysis- I**

- Market Integration Analysis- Market Research, designing questionnaires
- Sampling-Identification of markets
- Analysis and conclusion- Data collection: Primary, Secondary
- Data analysis- Arrival and price behavior, Price Transmission Analysis
- Price volatility, Intra and inter year price movements

### **Week – 6 : Market Integration Analysis- II**

- Market Integration analysis, Stationarity checking, Lag selection criteria
- Johanson co-integration test
- Granger causality test

### **Week – 7 : Market Integration Analysis- III**

- Vector error correction model (VECM)
- ARDL
- Bound test

**Week – 8 : Price Forecasting- Basics**

- Price Forecasting- Time series analysis
- Spatial and temporal price relationship
- Price forecasting- Selection of Markets and Data

**Week – 9 : Price Forecasting Methodology and Validation**

- The Modelling Approach- Univariate linear time series models: Exponential Smoothing, ARIMA, ARIMAX, Seasonal Decomposition etc.- Univariate non-linear time series models: ARCH, GARCH, EGARCH, TGARCH etc.
- Validation of the Forecasts with different statistical measures, Forecasts Precision
- Dissemination of Price Forecasts

**Week – 10 : Demand & Supply Analysis and TFP**

- Concept of Demand and supply: Importance, factors affecting to demand and supply, models
- Crop acreage
- Total Factor Productivity

**Week – 11 : Global Intelligence**

- Global Intelligence- Concept, Export- Import
- Opportunities in Agricultural Exports
- How to start Export- Import Business
- Market competitiveness
- Confront matrix, probability matrix

**Week – 12 : Commodity Futures Trading**

- Commodity futures market- futures trading, spot market, option trading etc.
- Hedging, Speculation, Technical and Fundamental Analysis



## Centre for Agricultural Market Intelligence

### under NAHEP-CAAST

### Anand Agricultural University, Anand

## Certificate Course on Agriculture Insurance

### Course Outline :

The course includes importance of crop insurance in the field of agriculture and its allied sectors. It includes the importance of yield data and its calculation methodology, premium and different index models. The participants will be equipped with knowledge regarding current insurance schemes of agriculture and its allied sectors including its benefits, constraints and prospects.

### Course Summary :

Course No.	:	NAHEPAAU06
Course Level	:	Beginner/ New
Course Duration	:	4 Weeks (One day per week)
Course Eligibility	:	Any Postgraduate / Faculties / Working Professionals from Academic and Research Organizations
Course Fees	:	Free

### Course Plan :

- Week – 1 : Introduction of Indian Agriculture & History of Crop Insurance in India, Risks in Agriculture and Crop Insurance Design Considerations
- Week – 2 : Crop Insurance (Yield Index Based), Weather Based Crop Insurance and Traditional Crop Insurance and Livestock / Cattle Wealth in Indian Rural Economy
- Week – 3 : Cattle and Poultry Insurance in India, Miscellaneous Agriculture Insurance Schemes, Agriculture Reinsurance
- Week – 4 : Current Insurance Scheme of Agriculture, Benefits, Problems and Prospects

## **Detail Course Contents :**

### **Week – 1 : Introduction of Indian Agriculture & History of Crop Insurance in India, Risks in Agriculture and Crop Insurance Design Considerations**

- Agricultural situation in India
- Agricultural census
- Indian agriculture in the post-independence era
- Crop insurance – History
- Crop insurance schemes
- Types of agricultural insurance
- Risks in agriculture and coping mechanisms
- Climate change and agriculture
- Crop insurance - General concepts, design and operations

### **Week – 2 : Crop Insurance (Yield Index Based), Weather Based Crop Insurance and Traditional Crop Insurance and Livestock / Cattle Wealth in Indian Rural Economy**

- National Agricultural Insurance Scheme (NAIS) – Components
- Role of yield data in NAIS
- Yield estimation methodology
- Actuarial premium rating in crop insurance
- Proposed modifications in NAIS
- Weather based crop insurance scheme – Rabi season and Challenges
- Realistic role of weather insurance and Other index models of crop insurance
- Horticulture / Plantation (Inputs) insurance scheme and Comprehensive floriculture insurance
- Livestock sector – Components and Organizations
- Indigenous breeds and their characteristics, General selection procedures for dairy breeds
- Common diseases / Economic losses caused by diseases

### **Week – 3 : Cattle and Poultry Insurance in India, Other Agriculture Insurance Schemes, Agriculture Reinsurance**

- Introduction to cattle insurance and Cattle insurance scheme

- Foetus (unborn calf) insurance scheme
- Central sector pilot scheme on cattle insurance & Innovations to reduce risk
- Comprehensive cover for poultry farms and Duck insurance scheme
- Various insurance schemes for animals
- Agricultural reinsurance – Principles, benefits, need and objectives
- Agricultural reinsurance – Selecting a program & Broad guidelines in selecting the program, Excess of loss treaty consideration
- Reinsurance arrangement – Selection factors
- Global agriculture reinsurance premium
- India - Future of agriculture reinsurance

**Week – 4 : Current Insurance Scheme of Agriculture, Benefits, Problems and Prospects**

- PMFBY
- RKVY
- Benefit of Crop Insurance
- Agriculture Insurance in India Problem and prospects