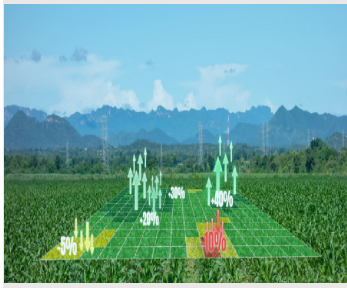
21SMCA102 AGRICULTURE INFORMATICS

Hours Per Week :

L	T	P	C
1	-	2	2

Total Hours :

L	T	P
15	-	30



Source :

https:*//www.kisangates.com/agro-informatics.html*

Course Description and Objectives:

Aim of this course is to introduce various digital tools such as computer based databases and data analytics, software programs MS Word, MS Excel and MS PowerPoint and provide hands on experience in using them for agricultural activities

Course Outcomes:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes
1	Skills in the use of computer and other digital tools and associated programs such as MS Word, MS Excel, MS PowerPoint and crop and hydrological models
2	Understanding and supporting farmers in the use of ICT based information systems such as e-agriculture and various mobile apps, fundamental concept of computer and Internet

SKILLS:

- ✓ *Creating Files & Folders, File Management*
- ✓ *Knowledge on MS-Word and MS Power Point*
- ✓ *Editing and presenting a scientific Document, Handling of Tabular data, animation, video tools, art tool, graphics, template & designs*

ACTIVITIES:

- *Demonstration of Agri-information system*
- *Creation of scientific website, presentation and management of agricultural information through web*
- *Computation of water and nutrient requirements of crop using CSM and IT tools*

UNIT - 1

Introduction to Computers, Anatomy of Computers, Memory Concepts, Units of Memory, Operating System, definition and types. Applications of MS-Office for creating, Editing and Formatting a document, Data presentation, tabulation and graph creation, statistical analysis, mathematical expressions, Database, concepts and types, creating database, uses of DBMS in Agriculture, Internet and World Wide Web (WWW), Concepts, components and creation of web, HTML, XML coding

UNIT - 2

e-Agriculture, concepts, design and development. Application of innovative ways to use information and communication technologies (IT) in Agriculture. ICT for Data Collection, formation of development programmes, monitoring and evaluation of Programmes

UNIT - 3

Computer Models in Agriculture: statistical, weather analysis and crop simulation models, concepts, structure, inputs-outputs files, limitation, advantages and application of models for understanding plant processes, sensitivity, verification, calibration and validation

UNIT - 4

IT application for computation of water and nutrient requirement of crops, Computer-controlled devices (automated systems) for Agri-input management, Smartphone mobile apps in Agriculture for farm advises, market price, postharvest management etc

UNIT - 5

Geospatial technology, concepts, techniques, components and uses for generating valuable agri-information. Decision support systems, taxonomy, components, framework, classification and applications in Agriculture, DSS, Agriculture Information/Expert System, Soil Information Systems etc for supporting Farm decisions. Preparation of contingent crop-planning and crop calendars using IT tools

LABORATORY EXPERIMENTS

LIST OF EXPERIMENTS

1. Booting of computer and its shut down - Practicing Windows operating system - Use of mouse - Title bar – Minimum, maximum and close buttons - Scroll bars - Menus and tool bars
2. Windows explorer- Creating folder - Copy and paste functions - Control panel- Notepad - Wordpad etc
3. MS word - Creating a document, saving and editing
4. Use of options from tool bars – Format - Insert and tools (Spelling and Grammar) - Alignment of paragraphs and text
5. Creating a table - Merging of cells - columns and row width - Formats etc
6. MS- Excel - Creating a spreadsheet - Alignment of rows - columns and cells using format tool bar

7. Entering formula expression through formula tool bar and use of in - built functions Sum – Average – Stdev – Maximum and minimum
8. Data analysis using inbuilt tool packs test of significance
9. Data analysis using inbuilt tool packs correlations and regressions
10. Creating graphs and saving with and without data
11. MS- Power Point - Creating slides, layouts, action buttons, multimedia features
12. MS- Access - Creating a data base, structuring with different types of fields
13. Use of query facility for accessing the information
14. Transforming the data of word - Excel and Access to other formats
15. Internet concepts - Creating Email - Search Engines - Website designing

REFERENCES:

1. John Walkenbach, Herb Tyson, Michael R. Groh, Faithe Wempen, Microsoft Office 2010 Bible
2. Bangia, Learning Ms Office 2010
3. Satish Jain and M. Geetha, MS-Office 2010 Training Guide
4. Kate Shoup, Microsoft Office 2010
5. Nancy Conner and Matthew MacDonald, Office 2010: The Missing Manual