

Syllabus for Bachelor of Agriculture

AGRICULTURAL STATISTICS

Subject code: 16AS0105

Subject Name: **Agricultural Informatics**

B. Sc. (Hons.) Agri., **First Year (Sem.-I)**

Objective:

To create the awareness among the students about Basic knowledge of Computer, Database and Computer models.

Credit Earned: 2+1= 3 Credits

Course Outcomes:

After completion of this course, student will be able to:-

1. Retain knowledge relevant to Computer, operating systems, data base and Internet
2. Gain information of e-Agriculture and Computer models used in Agriculture
3. Get hands on practice on Crop Simulation Models, DSSAT/Crop-Info/Crop Syst/ Wofost

Teaching and Evaluation Scheme

Teaching Scheme (hours)		Credits	Theory Marks			Practical Marks		Total Marks
Theory	Practical		Sem End (E)	Mid Sem (M)	Internal (I)	End Exam (E)	Viva (V)	
2	2	3	50	30	20	25	25	150

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Contents:

Unit	Topics	Contact Hours
Theory		
1.	Introduction to computers	1
2.	Anatomy of Computers	1
3.	Memory concepts, Units of memory	1
4.	Operating system, definition and types	1
5.	Applications of MS-Office for creating, editing and formatting a document	1
6.	Data presentation, tabulation and graph creation, statistical analysis, mathematical expressions	1
7.	Database, concepts and types, creating database, uses of DBMS in Agriculture	1
8.	Internet and World Wide Web (WWW), Concepts and components	2
9.	e-Agriculture, Concepts, design and development	1
10.	Application of innovative ways to use information and communication technologies (IT) in Agriculture	2
11.	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	2
12.	IT application for computation of water and nutrient requirement of crops	1
13.	Computer controlled devices (automated systems) for Agri-input management	2
14.	Smartphone mobile apps in Agriculture for farm advises, market price, post harvest management <i>etc.</i>	2
15.	Geospatial technology, concepts, techniques, components and uses for generating valuable agri-information	2

16.	Decision support systems, concepts, components and applications in Agriculture	1
17.	Agriculture Expert System, Soil Information Systems <i>etc</i> for supporting Farm decisions	1
18.	Preparation of contingent crop-planning and crop calendars using IT tools	1

Unit	Topics	Contact Hours
Practical		
1.	Study of Computer components, accessories, practice of important DOS commands	1
2.	Introduction of different operating systems such as windows, Unix/ Linux, creating, Files and folders, file management	1
3.	Use of MS-WORD and MS power point for creating, editing and presenting a scientific document	1
4.	MS-EXCEL- Creating a spreadsheet, use of statistical tools, writing expressions, creating graphs, analysis of scientific data, handling macros	1
5.	MS- ACCESS: Creating database, preparing queries and reports, demonstration of Agri-information system	1
6.	Introduction to World Wide Web (WWW) and its components. Hands on practice on Crop Simulation Models (CSM), DSSAT/Crop-Info/Crop Syst/ Wofost	1
7.	Preparation of Inputs file for CSM and study of model outputs, computation of water and nutrient requirements of crop using CSM and IT tools	1
8.	Use of smart phones and other devices in agro-advisory and dissemination of market information	1
9.	Introduction of Geospatial Technology, for generating information important for Agriculture	1
10.	Hands on practice on preparation of Decision Support System. Preparation of contingent crop planning	1

Reference Books:

1. Fundamentals of Computer Programming and Information Technology
Publisher: Kalyani Publishers, New Delhi.
2. Fundamentals of Computers
Publisher: PHI
3. E-Commerce and Mobile Commerce Technology
Publisher: S. Chand Publishers

Instructional Method:

- a. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by white board may also use any of tools such as demonstration, role play, quiz, brainstorming, MOOCs *etc.*
- b. The internal evaluation will be done on the basis of continuous evaluation of students in the class-room.
- c. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.
- d. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.