TEACHING PLAN: Agri-Informatics

SCHOOL: (SOAS) SCHOOL OF Agriculture Science		**ACADEMIC SESSION: 2023 – 2024**	**FOR STUDENTS' BATCH: 2022-26**		
1	**Course Code.**	ACS-201/ACS-P-201			
2	**Course Title**	Agri-Informatics			
3	**Credits**	2 (1+1)			
4	**Learning Hours**		**Contact Hours**	**54**	
			Assessment	**20**	
			Guided Study	**26**	
			Total hours	**100**	
5	**Course Objective**	1. To makes the student aware with the advances in agricultural development and entrepreneurship to provide better agricultural services, enhanced technology dissemination, and information delivery through the advances in ICT and internet. 2. To familiarize with different crop simulation models, use of DBMS in agriculture. 3. To create awareness of smart phone mobile apps in agriculture, application of Decision support system in agriculture. 4. To acquaint with various IT applications used for the computation of water and nutrient requirement of crops			
6	**Course Outcomes**	1. Understanding basic concept of computer. 2. Basic concept database. 3. Use of IT application and different IT tools in Agriculture. 4. Use of smart phone mobile apps in agriculture. 5. Understand analogy of computer 6. Basic knowledge of MS Office 7. Some basic knowledge of Internet and WWW 8. Use of Decision support systems, Agriculture Expert System and Soil Information Systems in Agriculture			
7	**Outline syllabus:**				
7.01	**Paper Code**	**Units**	**Syllabus**	**Page Numbers[1]**	**Lectures**
7.02	ACS-201/	**Unit -I**	Introduction to Computers, Operating Systems, definition and types, Applications of MSOffice for document creation & Editing	Self's notes	4

	ACS-P-201		Data presentation, interpretation and graph creation,	Self's notes	3
			Statistical analysis, mathematical expressions, Databas concepts and types	Self's notes	4
			Uses of DBMS in Agriculture	Self's notes	2
				Self's notes	
		Unit -II	World Wide Web (WWW): Concepts and components.	Self's notes	1
			Introduction to computer programming languages, concepts and standard input/output operations.	Self's notes	3
			E-Agriculture, concepts and applications.	Self's notes	2
			Use of ICT in Agriculture.	Self's notes	2
7.03		**Unit -III**	Computer Models for understanding plant processes.	Self's notes	2
			IT application for computation of water and nutrient requirement of crops,	Self's notes	3
			Computer-controlled devices (automated systems) for Agri-input Management, Smartphone Apps in Agriculture for farm advises, market price, postharvest management etc;	Self's notes	4
			Geospatial technology for generating valuable Agri-information.	Self's notes	2
			Decision support systems, concepts, components and applications in Agriculture,	Self's notes	3
			Agriculture Expert System, Soil Information Systems etc for supporting Farm decisions.	Self's notes	3
			Preparation of contingent crop planning using IT tools.	Self's notes	2
7.04		**Unit -IV**	**Topic to be taught (Practical Syllabus)**		
			1. Study of Computer Components, accessories, practice of important DOS Commands.	P. Manual	1
			2. Introduction of different operating systems such as windows, Unix/ Linux, Creating, Files & Folders, File Management.	P. Manual	1
			3. Use of MS-WORD and MS Power-point for creating, editing and presenting a scientific Document.	P. Manual	1
			4. MS-EXCEL - Creating a spreadsheet, use of statistical tools, writing expressions, creating graphs, analysis of scientific data.	P. Manual	1

			5. MS-ACCESS: Creating Database, preparing queries and reports, demonstration of Agriinformation system.	P. Manual	1
			6. Introduction to World Wide Web (WWW).	P. Manual	1
			7. Introduction of programming languages.	P. Manual	1
			8. Hands on Crop Simulation Models (CSM) such as DSSAT/Crop-Info/CropSyst/ Wofost;	P. Manual	1
			9. Computation of water and nutrient requirements of crop using CSM and IT tools..	P. Manual	1
			10. Introduction of Geospatial Technology for generating valuable information for Agriculture.	P. Manual	1
			11. Hands on Decision Support System.	P. Manual	1
			12. Preparation of contingent crop planning	P. Manual	1

8	Course Evaluation	
8.1	CA: 30%	
8.11	Attendance	5 %
8.12	Homework	4 Assignments, 10%
8.13	Quizzes	4 Quizzes, 10%
8.14	Presentation	1 Presentation, 5%
8.15	Any other	--
8.2	MTE	20%
8.3	End-term examination: 50%	
9	Text Books & References	
9.1	Suggested Readin: **Text book**	1. 1. John Walkenbach, Herb Tyson, Michael R. Groh, Faithe Wempen, Microsoft Office 2010 Bible 2. Bangia,Learning Ms Office 2010 3. Prof. Satish Jain and M. Geetha, MS-Office 2010 Training Guide 4. Johnson, Microsoft Office 2010......on Demand 5. Kate Shoup, Microsoft Office 2010 6. Melanie Gass, It's All about You! Office 2010 7. Nancy Conner and Matthew MacDonald, Office 2010: The Missing Manual
9.2	**Journal and magazine References**	1. Journal of Agricultural informatics 2. International journal of sustainable agricultural management and informatics 3. E- magazine of computer science 4. Computer applications
9.3	**Video References**	https://www.youtube.com/watch?v=mCWJsRqTrfw https://www.youtube.com/watch?v=auJtu6sDIu8 https://www.youtube.com/watch?v=Nst9WeSgS4M https://www.youtube.com/watch?v=v1hGLFszp2Y https://www.youtube.com/watch?v=Lc8y5xs8C8o https://www.youtube.com/watch?v=QHrO5kTy8aQ https://www.youtube.com/watch?v=AjFmzBJs2VU https://www.youtube.com/watch?v=1vReyRMOH5U https://www.youtube.com/watch?v=dx1-_4tlJus https://www.youtube.com/watch?v=bS5PsqGZDvc

Mapping of Outcomes v. Topics

Outcome no. → Syllabus topic↓	1	2	3
Paper Code.Unit I	✓	✓	
Paper Code. Unit II	✓	✓	
Paper Code. Unit III (Practical)	✓		✓

QUESTION BANK (Unit -I)

A. MCQs

Q.-1 C' in CPU denotes …

a) **Central** b) Common c) Convenient d) Computer

Q.2- Which of the following uses a handheld operating system?

a) Supercomputer b) personal computer c) Laptop d) **PDA**

Q.3- To display the contents of a folder in Windows Explorer you should _____

a) **click on it** b) collapse it c) name it d) give it a password

Q.4- The software that is used to create text-based documents are referred to as _____

a) DBMS b) Suites c) Spreadsheets d) **Word processors**

Q.5- What is the overall term for creating editing, formatting, storing, retrieving and printing a text document?

a) **Word processing** b) Spreadsheet design c) Web design d) Database management

B. Definitions

Define the following terms

a) Computer
b) CPU

c) MS office
d) Power point
e) Mouse

C. Short Notes

Write short notes on following

a) What is MS-Access?

b) What is computer?

c) Write comments on M S Office.

d) What is the use of DBMS in Agriculture? Write in detail.

e) Explain the statistical analysis and mathematical expressions

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D. Descriptive questions /Long answer

Descriptive questions/ write in detail about following questions

1. Explain the different input and output devices of a computer and write the characteristics of a computer?

2. What is an operating system? List any four features of MS Word.

3. Give in detail the components of the MS-Office and write the extension file name of word, excel and power point.

4. What is the use of graph objects in a chart? List the items where we can insert the labels in a chart.

5. What is Database? What are the advantages of using database?

E. MCQs

Q.-1 Which of the following must be contained in a URL?

a) A protocol identifier b) The letters www c) The unique registered domain name

d) **www.and the unique registered domain name**

Q.2- _____ Devices convert human understandable data and programs into a form that the computer can process.

a) Printing b) Output c) Solid state d) **Input**

Q.3- A (n) _____ is a set of programs designed to manage the resources of a computer, including starting the computer, managing programs, managing memory and coordinating tasks between input and output devices.

a) Application suite b) compiler c) input/output system d) **operating system**

Q.4- A computer's type, processor and operating system define it's …

a) Brand b) Size c) Platform d) **Speed**

Q.5- The process of a computer receiving information form a server on the Internet is known as

a) Pulling b) Pushing c) **Downloading** d) Transferring

F. Definitions

Define the following terms

(a) Programming
(b) Languages
(c) Components
(d) Editing
(e) Data

G. Short Notes

Write short notes on following

a) What is World Wide Web (WWW)
b) Programming
c) Input/output operations
d) E-Agriculture
e) Use of ICT in Agriculture
f) What is E-mail?
g) What is Internet?
h) What is web server?
i) What is e-Agriculture?

H. Descriptive questions /Long answer

Descriptive questions/ write in detail about following questions

1. What is internet? Write the steps to create an E-mail account.

2. What do you mean by GIS? How it is helpful in agriculture data analysis?

3. Write two features of Web browser?

4. Smartphone mobile apps in agriculture

I. MCQs

Q.-1 All the deleted files go to

a) Recycle bin b) Task bar c) Tool bar d) My computer

Q.2- _____...............................

Q.3- A (n) _____ is a set of programs designed to manage the resources of a computer, including starting the computer, managing programs, managing memory and coordinating tasks between input and output devices.

   a) Application suite b) compiler c) input/output system d) **operating system**

Q.4- A computer's type, processor and operating system define it's …

   a) Brand b) Size c) Platform d) **Speed**

Q.5- The process of a computer receiving information form a server on the Internet is known as

   a) Pulling b) Pushing c) **Downloading** d) Transferring

J. Definitions

Define the following terms

(f) Programming
(g) Languages
(h) Components
(i) Editing
(j) Data

K. Short Notes

Write short notes on following

j) What is World Wide Web (WWW)
k) Programming
l) Input/output operations
m) E-Agriculture
n) Use of ICT in Agriculture
o) What is E-mail?
p) What is Internet?
q) What is web server?
r) What is e-Agriculture?

L. Descriptive questions /Long answer

Descriptive questions/ write in detail about following questions

5. What is internet? Write the steps to create an E-mail account.

6. What do you mean by GIS? How it is helpful in agriculture data analysis?

7. Write two features of Web browser?

8. Smartphone mobile apps in agriculture

QUESTION BANK (Unit -II)

1. Input device
   2. Output device
3.
4. LAN
5. MAN
6. Networks
7. Excel
8.
9. WAN
10. Hardware
Software

Shorts notes

1. What is OS?

2. What is Computer Virus?

3. What is GIS?

4. Write two uses of GIS?

5. What are the advantages of E-mail?

6. What is LAN and WAN?

7. What is query design?

8. Explain about GUI, RAM, ROM & E-Mail

(Unit -III)

1. Explain different features of Power point.

2. What RAM and ROM?

3. What are the features of EDIT Menu?

4. What is the difference between cold booting and warm booting?

5. What are the different unites of a computer memory?

6. What is the function of a control unit?

7. Write the process to start MS-Excel.

8. What are the basic input and output functions of C?

9. What do you mean by software? Explain different types of software.

10. Write advantages of ICT in agriculture.

11. What is Computer model in agriculture?

12. Write the key features of soil information system.

13. Write the extension file name of MS-access?

14. What is GEOGLAM?

15. What is GIS? Explain any two uses of GIS.

16. Features of MS PowerPoint

17. Geographic information systems (GIS):

18. Computer-controlled devices(automated systems

19. Geospatial Technologies

20. Remote Sensing

21. Geographic Information Systems

22. Global Positioning System (GPS)

23. Draw and explain about block diagram of computer.

24. Central Processing Unit (CPU)

25. LOCAL AREA NETWORK (LAN)

26. What is Operating system? Explain its relevance to a computer.

27. Write the steps for creating and resizing the chart.

28. Explain different features of a power point.