ITM UNIVERSITY

Date of Meeting: 17-August-2022

Minutes of Meetings (BoS, School of Agriculture)

School of Agriculture has conducted a Board of Studies (BoS) meeting on 17-08-2022 from 03.00PM to 05.00PM for upgrading the current course curricula of undergraduate and postgraduate programmes, and addition of new programme. Few changes in scheme & syllabus have been proposed in this BoS meeting. The details of recommendations given by the panel members are attached.

Members of BoS

SN	Panel Members	Name	Designation	Organization	Signature
1	Chairperson	Prof. (Dr.) Shailesh Kumar Singh	Dean, School of Agriculture	ITM University Gwalior, MP	17/08/2022
2	Member Secretary	Dr. Dinesh Baboo Tyagi	Associate Professor & HOD, Agricultural Economics and Extension		
3	Internal Members	Dr. Jai Dev Sharma	Professor & HOD, Agronomy		17.08.2022
4		Dr. Shama Parveen	Associate Professor & HOD, Genetics & Plant Breeding		
5		Dr. Tufail Ahmed	Associate Professor & HOD, Plat Protection		
6		Dr. Sachin Kishor	Assistant Professor & COD, Horticulture		
7		Dr. Sagolshem Kalidas	Assistant Professor & COD, Soil Science & Agriculture Chemistry		17/08/2022
8		Dr. Prashant Kumar Singh	Assistant Professor (Plant Pathology)		
9	External Member	Prof. Ashok Kumar Singh	Ex-Professor & Head (Genetics & Plant Breeding); Ex-Director Instructions	Rajmata Vijyaraje Scindia Krishi Vishwa Vidyalaya, Gwalior, MP	

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Agenda Points for BoS Meeting

1. Agenda and action taken plan for previous BoS (dated 28-February-2022)
2. Modification in the scheme of UG & PG courses
3. Revision in credits and course nomenclature
4. Modification in syllabi of UG & PG courses
5. Revision in the Syllabi & Scheme of existing programme and deviation from BSMA committee
6. Addition of new UG & PG courses
7. Addition of ELP modules under READY programme
8. Incorporation of MOOC/SWAYAM courses
9. Revision of Committee for final defence of Dissertation report in postgraduate programmes
10. Any other points

Recommendations of Board of Studies

1. Agenda and action taken plan for previous BoS (dated 28-February-2022)

Agenda	ATR
The restructuring of Postgraduation programmes	The proposal and recommendation of BoS was approved by academic council and was implemented
Change in credits and course nomenclature	The proposal and recommendation were as per BSMA committee recommendation so recommendations of BoS was approved by academic council and was implemented
The compulsory non-gradial courses were made common compulsory and credited input	The proposal and recommendation of BoS was approved by academic council and was implemented
Revision of programme scheme and syllabi of Masters' and PhD programmes	The proposal and recommendation were as per BSMA committee recommendation so recommendations of BoS was approved by academic council and was implemented
Introduction of new programme	The new masters' programmes were approved by academic council and were introduced from session 2022-23.
Internship for Development of Entrepreneurship in Agriculture (IDEA)	The incorporation of IDEA was approved, and a committee was constituted for implementation of this programme. Committee has to submit report within 2 months.

2. Modification in the scheme of UG & PG courses

Since schemes of all programmes are aligned with Vth Deans' committee report and BSMA committee recommendations, no further change proposed.

3. Revision in credits and course nomenclature

No change in credits and nomenclature proposed.

4. Modification in syllabi of UG & PG courses

Syllabi of "GPB-121 Fundamentals of Genetics", "GPB-211 Principles of Plant Breeding", "GPB-502 Principles of Cytogenetics", "SS-111 Fundamental of Soil Science", "AEXT-122 Communication Skills and Personality Development","AE-211 Agricultural Finance and Co-operation", "AHS- 211 Live-stock and Poultry Management", "GPB-311 Crop Improvement-1 (Kharif Crops)", "AGRON-321 Rainfed Agriculture and Watershed Management" and "ELP-AHS-401 Poultry Production Technology" has been revised to bring synchronisation in the content sequence in B.Sc. (Hons) Agriculture recommended to academic council. (ANNEXURE-1)

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5. **Revision in the Syllabi & Scheme of existing programme and deviation from BSMA committee**

The syllabi and schemes of new programmes were discussed considering recommendations of previous BoS.

- Course PHM 503: Packaging and Storage of Fresh Horticultural Produce (1+1) and PHM 504: Packaging of Processed Horticultural Produce (1+1) has been Merged to make a common course of PHM-511:Packaging and Storage of Fresh and Processed Horticultural Produce (2+1).
- ENT-501: Insect Morphology (2+1) and Ent-502: Insect Taxonomy (1+2) has been Merged to ENT-501: Insect Morphology and Systematics (2+1). Reference-Pau Scheme.
- ENT-504: Insect Ecology (2+1) and ENT-508: Concepts of Integrated Pest Management (2+0) has been Merged to ENT-504: Insect Ecology and Integrated Pest Management (2+1). Reference-Tnau Scheme
- ENT-505: Biological Control of Insect Pests and Weeds (2+1) and ENT-507: Host Plant Resistance (1+1) has been merged as ENT-505: Biological Control of Insect-Pest and Host Plant Resistance (2+1).
- The Content of ENT-511: Post-Harvest Entomology (1+1) has been Distributed between ENT-509: Pests of Field Crops and Stored Grain (2+1) and ENT-510: Pests of Horticultural and Plantation Crops (2+1)
- Apiculture, Sericulture and Lac Culture has been Merged NT-506: Commercial Entomology2(1+1)
- New Elective Courses ELCT-AENG-311: Artificial Intelligence; ELCT-GPB-321: Molecular Biology was Recommended for B.Sc. (Hons) Agriculture.

6. **Addition of new UG & PG courses** "STAT-211 Statistical Methods", "ELCT-AENG-311 Artificial Intelligence", "SS-311 Manures, Fertilizers and Soil Fertility Management", "ELCT-AENG-321 Information Technology for Land and Water management", "ELCT-GPB-321 Molecular Biology", "ELP-AEXT-401 Agriculture Kiosk and Rural Development" and "ELP-JMC-401 Multimedia and Graphic Designing & Production of Information Materials" was recommended for B.Sc. (Hons) Agriculture. (ANNEXURE-I)

7. **Addition of ELP modules under READY programme**

Existing modules	Additional modules from session (2022-23)
ELP-ABM-401: Agribusiness and Industrial Management*	ELP-FSC-401: Integrated Fish Farming
ELP-ABM-402: Industrial Training on Product Development and Marketing*	ELP-JMC-401: Multimedia and Graphic Designing & Production of Information Materials
ELP-ABM-403: Agricultural Heritage and Agritourism	ELP-HORT-407: Processing, Preservation and Value Addition in Ornamental, Medicinal and Aromatic plants
ELP-AEXT-401: Agriculture Kiosk and Rural Development	ELP-AENG-401: Agri-based Software Design
ELP-AEXT-402: Introduction Indigenous Technical Knowledge (ITK)	ELP-AEXT-401: Agricultural Kiosk and Rural Development
ELP-AGRON-401: Agriculture Waste Management	
ELP-AGRON-402: Organic Production Technology	

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ELP-AGRON-403: Commercial Crop Production Technology (Agronomical Crops)	
ELP-ENT-401: Commercial Beekeeping	
ELP-ENT-402: Production Technology for Bioagents and Biofertilizer	
ELP-GPB-401: Seed Production and Technology	
ELP-HORT-401: Commercial Horticulture (Vegetable and Spices Crop Production)	
ELP-HORT-402: Floriculture and Landscaping	
ELP-HORT-403: Processing of Fruits and Vegetables for Value Addition	
ELP-HORT-404: Commercial Nursery Establishment and Mass Multiplication of Horticultural Crops	
ELP-HORT-405: Protected Cultivation of High Value Horticulture Crops	
ELP-HORT-406: Medicinal and Aromatic Crop Production	
ELP-PP-401: Mushroom Cultivation Technology	
ELP-PP-402: Plant Health Diagnosis and Management	
ELP-SS-401: Soil, Plant, Water and Seed Testing	

8. **Incorporation of MOOC/SWAYAM courses**

   The committee has been constituted to identify suitable MOOC courses. The members are:

   a. Er. Mukesh Seetpal, Assistant Professor, Agriculture Engineering (Academic Coordinator)
   b. Dr. DasrathBhati, Assistant Professor, Horticulture
   c. Dr. Sudheer Kumar Pathak, Assistant Professor, Genetics & Plant Breeding
   d. Dr. Bhoomi Suthar, Assistant Professor, Agriculture Economics
   e. Dr. RabiyaBasri, Assistant Professor, Entomology

9. **Revision of Committee for final defence of Dissertation report in postgraduate programmes**

   At present, the committee consists of:

   a. Major advisor & Chairman
   b. Member from major area (Co-advisor)
   c. Member from minor area
   d. Dean Nominee

   As per the program need, the committee for final defence should have one external examiner. It is proposed that the committee should consists of:

   a. Major advisor & Chairman
   b. Member from major area (Co-advisor)
   c. Member from minor area
   d. Dean Nominee
   e. External Examiner (from other university with minimum rank of Associate Professor or Scientist grade)
   f. In case of any deviation, prior permission from Honourable Vice Chancellor will be required.

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10. Any other points

a. The board has advised to consult the scheme of various universities/institutions for necessary deviation from BSMA committee/ V Deans Committee report.

b. Incorporation of additional elective courses: Two courses given below has been proposed to be incorporated as elective courses for the students pursuing B.Sc. (Hons) Agriculture students. It was proposed to be incorporated in 5th semester; however, committee has recommended it to be introduced in 4th semester as the elective courses are being initiated during 4th semester:
   - Understanding 21st century
   - India in 21st century

All the agenda points of BoS were discussed in detail in support of necessary documents and same was recommended.

Date of Meeting: 28-February-2022

Agenda	ATR
Changes in scheme	Consented by BOS and forwarded to academic council
Changes in credits and course nomenclature	Changes were approved by BOS, subjected to academic council and was implemented
Introduction of new programme	The new masters' programmes were approved by academic council and were introduced from session 2022-23
Internship during Masters programme	Internship for Development of Entrepreneurship in Agriculture was consented by BOS and forwarded to academic council
Incorporation of MOOC/SWAYAM courses	The proposal and recommendation of the committee for incorporation of MOOC/SWAYAM courses was approved by the academic council and implemented

The meeting was ended with vote of thanks by chairperson.

17/Aug/2022

Dean & Chairperson (BoS)

School of Agriculture

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Annexure-I

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CELEBRATING DREAMS

Syllabus-2022-2023

(SOAG)(BSc_HonsAgriculture)

Title of the Course	Artificial Intelligence
Course Code	ELCT-AENG-311[T]

Part A

Year		**Semester**		**Credits**	L	T	P	C
					2	0	0	2
Course Type	Theory only							
Course Category	Discipline Electives							
Pre-Requisite/s	Agriculture Engineering		**Co-Requisite/s**	Agriculture Engineering				
Course Outcomes & Bloom's Level	**CO1-** Remember the LIPS and PROLOG. **(BL1-Remember)** **CO2-** Describe A and AO logarithm**(BL2-Understand)** **CO3-** Apply the knowledge of LIPS and PROLOG in constructing symbolic grammars for natural language that would be used to construct logical representations of sentences. **(BL3-Apply)** **CO4-** Analyse the uncertainty on the basis of probabilistic interferences. **(BL4-Analyze)** **CO5-** Prepare the robot with artificial intelligence. **(BL5-Evaluate)**							
Coures Elements	Skill Development ✓ Entrepreneurship ✕ Employability ✕ Professional Ethics ✓ Gender ✕ Human Values ✕ Environment ✕		**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG5(Gender equality) SDG6(Clean water and sanitation) SDG7(Affordable and clean energy) SDG8(Decent work and economic growth) SDG9(Industry Innovation and Infrastructure) SDG10(Reduced inequalities) SDG11(Sustainable cities and economies) SDG12(Responsible consuption and production) SDG13(Climate action) SDG14(Life below water) SDG15(Life on land) SDG16(Peace Justice and strong institutions) SDG17(Partnerships for the goals)				

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Part B

Modules	Contents	Pedagogy	Hours
Unit 1	Foundation and history of artificial intelligent, problems and techniques AI programming languages, introduction to LISP and PROLOG- problem spaces and searches, blind search strategies, Breadth first- Depth first- heuristic search techniques	Class room teaching (chalk-board), Power Point Presentations, ABL activities, Assignments, Quiz.	6
Unit 2	Hill climbing: best first-A* algorithm AO* algorithm- game tree, Min max algorithms, game playing- alpha beta pruning. Knowledge representation issues, predicate logic- logic programming, semantic nets-frames and inheritance, constraint propagation, representing knowledge using rules, rules based deduction systems.	Class room teaching (chalk-board), Power Point Presentations, ABL activities, Assignments, Quiz.	6
Unit 3	Reasoning under uncertainity, review of probability, Bay;s probabilistic interferences and Dempster shafer theory, Heuristic methods, symbolic reasoning under uncertainty, Statistical reasoning, Fuzzy reasoning, Temporal reasoning, Non monotonic reasoning.	Class room teaching (chalk-board), Power Point Presentations, ABL activities, Assignments, Quiz.	6
Unit 4	Planning and planning in situational calculus, representation for planning, partial order planning algorithm, learning from examples, discovery as learning, learning by analogy, explanation based learning, neural nets, genetic algorithms.	Class room teaching (chalk-board), Power Point Presentations, ABL activities, Assignments, Quiz.	7
Unit 5	Principles of Natural language processing, rule based systems architecture, Expert systems, knowledge acquisition concepts, AI application to robotics, and current trends in intelligent systems.	Class room teaching (chalk-board), Power Point Presentations, ABL activities, Assignments, Quiz.	7

Part C

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
Module-1	Write a effective news story	Case Study	BL2-Understand	2

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Part D(Marks Distribution)

Theory					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
100	41	40		60	
Practical					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
	0				

Part E

Books	Russell, S. and Norvig, P. (1998). Artificial Intelligence: A Modern Approach. Prentice Hall.
Articles	
References Books	
MOOC Courses	
Videos	

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	1	1	-	-	-	-	-	-	-	3	1	-
CO2	-	2	1	-	2	-	1	-	-	-	2	-	-	3	-
CO3	2	-	2	1	2	-	1	-	-	-	1	1	-	-	2
CO4	-	1	1	-	-	-	-	-	-	-	-	2	-	-	-
CO5	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Syllabus-2022-2023

(SOAG)(BSc_HonsAgriculture)

Title of the Course	Information Technology for Land and Water management
Course Code	ELCT-AENG-321[T]

Part A

Year		**Semester**		**Credits**	L	T	P	C
					1	0	1	2
Course Type	Embedded theory and lab							
Course Category	Discipline Core							
Pre-Requisite/s	Agronomy		**Co-Requisite/s**	Ag. Engineering				
Course Outcomes & Bloom's Level	**CO1-** Describe the basics of geoinformatics and nanotechnology in relation to precision farming **(BL1-Remember)** **CO2-** Explain about the effective use of inputs result in greater crop yield with good quality without affecting the environment **(BL2-Understand)** **CO3-** Apply precision agriculture which address both economic and environmental issues that surround production agriculture today **(BL3-Apply)** **CO4-** Simplify and encourage the farmers to study of special and temporal variability of the input parameters using primary data in field level **(BL4-Analyze)** **CO5-** Judge about the consequences of applying imbalance dose of farm input like irrigation, fertilizer, insecticides and pesticides **(BL5-Evaluate)**							
Coures Elements	Skill Development ✕ Entrepreneurship ✕ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✓		**SDG (Goals)**	SDG2(Zero hunger) SDG6(Clean water and sanitation) SDG11(Sustainable cities and economies) SDG12(Responsible consuption and production) SDG13(Climate action) SDG15(Life on land)				

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Part B

Modules	Contents	Pedagogy	Hours
Unit 1	Concept of Information Technology (IT) and its application potential. Role of IT in natural resources management. Existing system of information generation and organizations involved in the field of land and water management.	ABL, PBL, Field & Outdoor Learning and guided learning	3
Unit 2	Application and production of multimedia. Internet application tools and web technology. Networking system of information. Problems and prospects of new information and communication technology.	ABL, PBL, Field & Outdoor Learning and guided learning	3
Unit 3	Development of database concept for effective natural resources management. Application of remote sensing, geographic information system (GIS) and GPS. Rational data base management system.	ABL, PBL, Field & Outdoor Learning and guided learning	3
Unit 4	Object oriented approaches. Information system, decision support systems and expert systems. Agricultural information management systems - use of mathematical models and programmes.	ABL, PBL, Field & Outdoor Learning and guided learning	3
Unit 5	Application of decision support systems, multi sensor data loggers and overview of software packages in natural resource management. Video-conferencing of scientific information.	ABL, PBL, Field & Outdoor Learning and guided learning	4

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Part C

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
Module-1	Multimedia production. Internet applications: E-mail, voice mail, web tools and technologies.	Experiments	BL2-Understand	2
Module-2	Handling and maintenance of new information technologies and exploiting their potentials.	Experiments	BL2-Understand	2
Module-3	Exercises on database management using database and spreadsheet programmes. Usage of remote sensing, GIS and GPS survey in information generation and processing.	Experiments	BL3-Apply	2
Module-4	Exercises on running computer software packages dealing with water balance, crop production, land development, land and water allocation, watershed analysis etc.	Experiments	BL3-Apply	2
Module-5	Exercises on simple decision support and expert systems for management of natural resources. Multimedia production using different softwares.	Experiments	BL3-Apply	2
Module-6		Experiments	BL3-Apply	2
Module-7	Exercises on development of information system on selected theme(s). Video-conferencing of scientific information	Experiments	BL4-Analyze	2

Part D(Marks Distribution)

Theory					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
70	25	40		30	
Practical					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
30	14	0	0	30	0

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Part E

Books	Reddy, S.R. (2017). Geoinformatics and Nanotechnology for Precision Farming B.Sc. 6th Sem. Kalyani Pub., Ludhiana.
Articles	
References Books	
MOOC Courses	
Videos	

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	2	3	-	3	-	-	-	-	-	3	-	-
CO2	-	2	2	2	3	2	3	-	-	-	-	-	1	2	-
CO3	-	-	2	2	3	2	3	-	-	-	-	-	-	2	1
CO4	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-
CO5	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Syllabus-2022-2023

(SOAG)(BSc_HonsAgriculture)

Title of the Course	Molecular Biology
Course Code	ELCT-GPB-321[T]

Part A

Year		**Semester**		**Credits**	L	T	P	C
					2	0	1	3
Course Type	Embedded theory and lab							
Course Category	Discipline Electives							
Pre-Requisite/s	Genetics and Plant Breeding			**Co-Requisite/s**	Cell biology			
Course Outcomes & Bloom's Level	**CO1-** Describe the basic understanding on plant genetics and hereditary **(BL1-Remember)** **CO2-** Understanding of structures, functions, and internal controls within individual cells **(BL2-Understand)** **CO3-** Recognize and interpret the structural and functional aspects of plant molecules and their interactions **(BL3-Apply)** **CO4-** Analyse various techniques and the effectiveness of molecular breeding at commercial level. **(BL4-Analyze)** **CO5-** Assess for the new opportunities to speed up plant breeding **(BL5-Evaluate)** **CO6-** Develop high yielding verities and enhancing crop resilience to combined abiotic and biotic stress **(BL6-Create)**							
Coures Elements	Skill Development ✓ Entrepreneurship ✗ Employability ✓ Professional Ethics ✗ Gender ✗ Human Values ✗ Environment ✗		**SDG (Goals)**	SDG2(Zero hunger) SDG3(Good health and well-being) SDG6(Clean water and sanitation) SDG13(Climate action) SDG15(Life on land)				

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Part B

Modules	Contents	Pedagogy	Hours
Unit 1	History of molecular biology; Central dogma of life; Structure of DNA and RNA; Gene structure and function; DNA replication; transcription; Genetic code and translation.	Class room Lectures/ Guest lectures Laboratory/ Field and lab Practicals Student Seminars/ Presentations ABL activities Lab and field Tours/ Demonstrations Assignments	6
Unit 2	Structure of prokaryotic and eukaryotic nuclear and organelle genomes; Gene regulation in prokaryotes: Lac operon concept, tryp concept.	Class room Lectures/ Guest lectures Laboratory/ Field and lab Practicals Student Seminars/ Presentations ABL activities Lab and field Tours/ Demonstrations Assignments	6
Unit 3	Introduction to microbial genetics; conjugation, transformation and transduction	Class room Lectures/ Guest lectures Laboratory/ Field and lab Practicals Student Seminars/ Presentations ABL activities Lab and field Tours/ Demonstrations Assignments	6
Unit 4	Tools in molecular biology: Role of enzymes in molecular biology; Principles of Polymerase Chain Reaction; Electrophoresis; PCR and hybridization based molecular markers.	Class room Lectures/ Guest lectures Laboratory/ Field and lab Practicals Student Seminars/ Presentations ABL activities Lab and field Tours/ Demonstrations Assignments	7
Unit 5	Recombinant DNA technology, transgenes, method of transformation, selectable markers and clean transformation techniques, vector-mediated gene transfer, physical methods of gene transfer; Production of transgenic plants in various field crops. GMO; International regulations, biosafety issues of GMOs; Regulatory procedures in major countries including India, ethical, legal and social issues.	Class room Lectures/ Guest lectures Laboratory/ Field and lab Practicals Student Seminars/ Presentations ABL activities Lab and field Tours/ Demonstrations Assignments	7

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Part C

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
Practical 1	Preparation of bacterial competent cells and transformation.	Experiments	BL2-Understand	2
Practical 2	Isolation and purification of plant and animal DNA.	Experiments	BL3-Apply	2
Practical 3	Measurement of nucleic acid concentration using spectrophotometer and gel electrophoresis.	Experiments	BL3-Apply	2
Practical 4	DNA amplification using RAPD, microsatellite primers and analysis.	Experiments	BL3-Apply	2
Practical 5	CAPS primers.	Experiments	BL4-Analyze	2
Practical 6	Generation of linkage maps and mapping of qualitative genes.	Experiments	BL4-Analyze	2
Practical 7	Estimation of genetic similarities and generation of dendrograms	Experiments	BL4-Analyze	2
Practical 8	Design of Gene Constructs	Experiments	BL5-Evaluate	2

Part D(Marks Distribution)

Theory					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
70	26	40		30	
Practical					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
30	15			30	

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Part E

Books	Allison, L.A. (2011). Fundamental Molecular Biology. Wiley Global Education. Carson, S., Miller, H.B. and Witherow, D.S. (2012). Molecular Biology Techniques A Classroom Laboratory manual. Elsevier. Kreuzer, H. and Massey, A. (2008). Molecular Biology and Biotechnology: A Guide for Teachers. ASM Press. Lodish, H., Berk, A., Kaiser, C.A., Krieger, M., Bretscher, A., Ploegh, H., Amon, A. and Scott, M.P. (2012). Molecular Cell Biology. W. H. Freeman. Sambrook, J. and Russel, D. (2001). Molecular Cloning: A Laboratory Manual. 3rd Ed Cold Spring Harbor Laboratory Press. Surzycki, S. (2000). Basic Techniques in Molecular Biology. Springer Berlin Heidelberg Voet, D., Voet, J.G. and Pratt, C.M. (2004). Fundamentals of Biochemistry. 2nd Ed. New York: Wiley. Walker, J.M. and Rapley, R. (2000). Molecular Biology and Biotechnology. 4th Ed. The Royal Society of Chemistry.
Articles	
References Books	
MOOC Courses	
Videos	

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	2	-	-	-	-	-	-	-	-	3	1	-
CO2	-	1	1	-	1	-	-	-	-	-	-	-	1	2	-
CO3	2	-	-	1	1	-	1	-	-	-	-	2	-	3	1
CO4	-	2	1	-	-	-	-	-	-	-	-	1	-	-	-
CO5	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-

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CELEBRATING DREAMS

Syllabus-2022-2023

(SOAG)(BSc_HonsAgriculture)

Title of the Course	Agriculture Kiosk and Rural Development
Course Code	ELP-AEXT-401 [P]

Part A

Year		**Semester**		**Credits**	L	T	P	C
					0	0	10	10
Course Type	Lab only							
Course Category	Discipline Electives							
Pre-Requisite/s	Fundamentals of agricultural extension		**Co-Requisite/s**					
Course Outcomes & Bloom's Level	**CO1-** Remember the information about NABARD and KIOSK.**(BL1-Remember)** **CO2-** Understand the various advisory expert service of KIOSK for rural area.**(BL2-Understand)** **CO3-** Applying the KIOSK in agriculture and poultry**(BL3-Apply)** **CO4-** Analyzing the different marketing strategies, ups and downs of market.**(BL4-Analyze)** **CO5-** Evaluation of Various rural development programmes for KIOSK development in rural area**(BL5-Evaluate)**							
Coures Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✗ Gender ✗ Human Values ✗ Environment ✗	**SDG (Goals)**	SDG1(No poverty) SDG2(Zero hunger) SDG8(Decent work and economic growth) SDG9(Industry Innovation and Infrastructure) SDG10(Reduced inequalities) SDG12(Responsible consuption and production) SDG13(Climate action) SDG17(Partnerships for the goals)					

Part B

Modules	Contents	Pedagogy	Hours
Unit 1	Introduction definitions of basic terms related to forestry, objectives of silviculture, forest classification, salient features of Indian Forest Policies	Cooperative Learning Strategies (CLS), Stimulus activities, Guided Questioning and Field trials	3

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Part C

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
Module 1	General information: In this module the students will get details about lands and method need to take to make fertile land, presently available government policies, subsidy rates to crops and pesticides and NABARD rules where it is a National Bank for Agriculture and Rural Development	PBL	BL2-Understand	20
Module 2	Experts Advice: In this module the students will be able to clarify their doubts lively by experts through online video chat and if suppose expert is not available at that time then the that will be directly forwarded to there and they will give the reply to our mail when they see. Live demos are also available to the farmers where they can each and every part in detail. 1. Online video chat 2. Chat info. 3. Live Demos	PBL	BL2-Understand	20
Module 3	Aqua and Poultry information: Here the students will get the details about the Aqua and Poultry farming which includes generation, marketing, exporting and precautions to be taken all these information will be get to Aqua and Poultry farmers. 1. Generation. 2. Marketing. 3. Exporting. 4. Precautions	PBL	BL2-Understand	20
Module 4	Irrigation and Weather information: In this module the farmer will get water resources available in their areas and what steps needs to be taken for irrigation of a particular crop. Four days weather forecasting information is also provided so that the farmer can aware of weather details and they can plan according to it. 1. Water resources. 2. Irrigation 3. Weather forecast	PBL	BL3-Apply	20
Module 5	Agriculture information: Here the information related to the required crop; Seeds, which are to be used, Fertilizers, type of fertilizers to be taken depending on the condition of the crop, type of Precautions to be taken and Time required to cultivate. 1. Crops. 2. Seeds. 3. Pesticides .4. Fertilizers. 5. Precautions	PBL	BL3-Apply	20
Module 6	Market Strategy: Here the students will get the details about the present market trends that means market rates of different crops and seeds and up's and down's in the market from the past 3 months. 1. Market values 2. Ups and down.	PBL	BL4-Analyze	20
Module 7	Connectivity: A sample Idea of placing KIOSK in a state where all villages will be connected through mandal server, all the mandal servers will be connected to district	PBL	BL4-Analyze	20

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	head server and finally all the district servers will be connected to state main server.			
Module 8	Rural development e- programmers: e-grama network, promoted by Gramin MahitiParishat (GMP) – an NGO working to establish computer kiosk enterprises in rural area. E-grama offers membership-fee-based access to basic PC-enabled services. A per-family fee allows any person from the member's family to access the kiosk at any time	PBL	BL5-Evaluate	20

Part D(Marks Distribution)

Theory					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
Practical					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
100	41				

Part E

Books	Agriculture In India : Policy And Performance by B Sambasiva Rao • Agricultural Problems of India by C B Mamoria • Handbook of Poverty in India: Perspectives, Policies, and Programmes by R. Radhakrishna, Shovan Ray • Exploring Reading Kiosk Concept: Creating Reading Habit among the Citizen by Nurhayati Abdul. • Rural Development principles and policy by Katar Singh and Anil Shisodiya. • Rural Development planning and management by Gullybaba.
Articles	
References Books	Rural Development principles and policy by Katar Singh and Anil Shisodiya. • Textbook of Rural Development Entrepreneurship & Communication Skillby Sagar mondal • Rural development approaches and strategies by Radhika Kapoor. • E- Governance and rural development empirical study by Rajesh Kumar
MOOC Courses	
Videos	

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Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
CO3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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CELEBRATING DREAMS

Syllabus-2022-2023

(SOAG)(BSc_HonsAgriculture)

Title of the Course	Multimedia and Graphic Designing & Production of Information Materials
Course Code	ELP-JMC-401 [P]

Part A

Year		**Semester**		**Credits**	L	T	P	C
					0	0	10	10
Course Type	Lab only							
Course Category	Discipline Electives							
Pre-Requisite/s	fundamentals of computer application		**Co-Requisite/s**	Tools and techniques of information generation and representation				
Course Outcomes & Bloom's Level	**CO1-** Remembering the information about the multimedia and Software design.**(BL1-Remember)** **CO2-** To understand the different types of sounds, editing and mixing in sound.**(BL2-Understand)** **CO3-** Appling the different types of graphics in multimedia and various images format.**(BL3-Apply)** **CO4-** Analyze the different video and animation in multimedia and different file format and their use in multimedia.**(BL4-Analyze)** **CO5-** Evaluation of multimedia application and multimedia in different industries.**(BL5-Evaluate)**							
Coures Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✕ Gender ✕ Human Values ✕ Environment ✕	**SDG (Goals)**	SDG4(Quality education) SDG5(Gender equality) SDG12(Responsible consuption and production) SDG13(Climate action) SDG15(Life on land) SDG17(Partnerships for the goals)					

Part B

Modules	**Contents**	**Pedagogy**	**Hours**

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Part C

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
Module-1	Applying the principles of organic farming in in the field	PBL	BL2-Understand	30
Module-2	Sound in Multimedia , Importance of Sound in Multimedia, Sound and its attributes – tone, intensity, frequency, wavelength , pitch etc . Mono v/s Stereo sound , sound channel, effects in sound , analog v/s digital sound, overview of various sound file formats on PC WAVE, MP3, concept of MIDI, software for sound editing and mixing, 3D sound .	PBL	BL3-Apply	30
Module-3	Graphics in Multimedia, importance of graphics in multimedia, vector and raster graphics, image capturing methods, scanner, digital camera etc. Various attributes of images- Size, color, bit depth, resolution etc., Various image file formats- BMP, DIB,EPS, PIC and TIF formats and their features and limitations .	PBL	BL4-Analyze	30
Module-4	Video and animation in multimedia, impact of video in multimedia, basics of videos, analog and digital video, how to use video on PC, brief note on various video standard, PAL, NTSE, different file format and their use in multimedia, MPEG, AVI, MJPG, name of video editing software, basics of animation, types of animation and use of animation, software for creating animations	PBL	BL5-Evaluate	35
Module-5	Application of multimedia and its future, application og multimedia in different industries Education, Entertainment, Journalism etc. Future of Multimedia, Carrier in multimedia production, virtual reality as new technology in multimedia, application of VR, introduction to HMD, Boom cave, introduction to various types authoring tools.	PBL	BL6-Create	35

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Part D(Marks Distribution)

Theory					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
Practical					
Total Marks	**Minimum Passing Marks**	**External Evaluation**	**Min. External Evaluation**	**Internal Evaluation**	**Min. Internal Evaluation**
100	41				

Part E

Books	How to use graphic design to sell things, explain things, make things look better, make people laugh, make people cry, and (every once in a while) change the world' by Michael Bierut
Articles	
References Books	The honest guide to creativity and logo design by James martin.
MOOC Courses	
Videos	

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
CO4	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
CO5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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OMVEER SINGH

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