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MAHATMA GANDHI UNIVERSITY, KERALA

Abstract

B.Voc. (Honours) Agriculture Technology - Modification of Syllabus, Modification of MPC Courses in semesters III to VI - Action taken by the Hon'ble Vice Chancellor- exercising powers under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985 - Approved - Orders issued.

ACADEMIC A 12 SECTION

No. 9000/AC A 12/2026/MGU Priyadarsini Hills,Dated: 13.10.2026

Read:-1. Request of the Convenor, Expert Committee for Agriculture and Sustainability dated 30.09.2026

2. Orders of the Vice Chancellor under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, dated 09.10.2026

ORDER

The Convenor, Expert Committee for Agriculture and Sustainability, vide the paper read as (1) above, requested modifications to the semester details, examination duration, course description, course code, course name, mode of assessment, course outcomes, total hours and syllabus of MPC Courses in Semesters III to VI of the B.Voc. (Honours) Agriculture Technology programme and submitted the relevant recommendations. The recommendations are attached as an annexure.

Considering the urgency of the matter, sanction has been accorded by the Hon'ble Vice Chancellor, in exercise of the powers of the Academic Council as provided under Section 10(17) Chapter III of the Mahatma Gandhi University Act 1985, vide the paper read as (2) above, to approve the specified recommendations.

Accordingly, the semester details, examination duration, course description, course code, course name, mode of assessment, course outcomes, total hours and syllabus of MPC Courses in Semesters III to VI of the B.Voc. (Honours) Agriculture Technology programme stand modified to the extent specified in the approved recommendations.

Orders are issued accordingly.

JOBI E C

ASSISTANT REGISTRAR III
(ACADEMIC)
For REGISTRAR

Copy To

1.PS to VC
2.PA to Registrar/CE/FO
3.JR II (Admn)
4.DR II/AR III(Acad)
5. ACC 1, ACC 2 Sections
6. Convenor, Expert Committee for Agriculture and Sustainability
7. JR/DR/AR(Exam)
8. IT Cell 1, 2 & 3 Sections/ OQPM 3 Section
9. Records/IQAC/ Website/P.R.O
10. Stock File/FC.

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The document is digitally approved. Hence signature is not needed.

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ANNEXURE

Programme: B.Voc. (Honours) Agriculture Technology

Course Code in Index		Course Name in Index		Page Number
Existing	Modified	Existing	Modified	
MG3MPCBAT200	MG3MPCBAT204	Fundamentals of Organic Farming	Principles and Practice of Organic Agriculture	6
MG4MPCBAT200	No change	Commercial Vegetable Production	Production Technology for Ornamental Crops, Vegetables and Landscaping	6
MG5MPCBAT300	No change	Principles of Agribusiness Management	Renewable Energy and Green Technology	7
MG6MPCBAT300	No change	Entrepreneurship Development	Agropreneurship Development	8

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: On The Job Training
Course code: MG2SDCBAT103

Semester		Page Number
Existing	Modified	
1	2	59

Programme: B.Voc. (Honours) Agriculture Technology

Course Code in Index		Course Name in Index		Page Number
Existing	Modified	Existing	Modified	
MG3SDCBAT200	No change	Fundamentals of Organic Farming	Plantation Crops, Spices and Fruits	63
MG3SDCBAT202	No change	Plantation Crops, Spices and Fruits	Fundamentals of Organic Farming	
MG3MPCBAT200	MG3MPCBAT204	Fundamentals of Organic Farming	Principles and Practice of Organic Agriculture	

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Integrated Pest Management of Crops
Course code: MG3SDCBAT201
Semester:III

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End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	
2 hr	1.5 hr	72

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Fundamentals of Organic Farming
Course code: MG3SDCBAT202
Semester:III

End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	
2 hr	1.5 hr	78

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: On The Job Training
Course code: MG3SDCBAT203

Semester		**Page Number**
Existing	Modified	
1	3	85

Programme: B.Voc. (Honours) Agriculture Technology

Course Code		**Course Name**		**Page Number**
Existing	Modified	Existing	Modified	
MG3MPCBAT200	MG3MPCBAT204	Fundamentals of Organic Farming	Principles and Practice of Organic Agriculture	88
MG4MPCBAT200	No change	Commercial Vegetable Production	Production Technology for Ornamental Crops, Vegetables and Landscaping	95

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Commercial Vegetable Production
Course code: MG4SDCBAT201
Semester:IV

End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	
2 hr	1.5 hr	103

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Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Farm Power and Machinery
Course code: MG4SDCBAT202
Semester:IV

Course Description		**End Semester Evaluation(ESE) Duration of Examination**		**Page Number**
Existing	Modified	Existing	Modified	
Tillage	Practical	2hr	1.5 hr	107 108

Programme: B.Voc. (Honours) Agriculture Technology

Course Code		**Course Name**		**Page Number**
Existing	Modified	Existing	Modified	
MG4MPCBAT200	No change	Commercial Vegetable Production	Production Technology for Ornamental Crops, Vegetables and Landscaping	122
MG5SDEBAT301	MG5SDEBAT300	Tissue Culture and Crop Improvement	No change	128
MG5SDEBAT302	MG5SDEBAT301	Weather Forecasting and Climate Change	No change	
MG5SDCBAT303	MG5SDCBAT301	Principles of Agribusiness Management		
MG5MPCBAT300	No change	Principles of Agribusiness Management	Renewable Energy and Green Technology	

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Tissue Culture and Crop Improvement
Semester:V

Course Code		End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	Existing	Modified	
MG5SDEBAT301	MG5SDEBAT300	2 hr	1.5 hr	133 136

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Weather Forecasting and Climate Change
Course code: MG5SDEBAT301

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Semester:V

End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	
2 hr	1.5 hr	141

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Principles of Agribusiness Management
Semester:V

Course Code		Mode of Assessment (Continuous Comprehensive Assessment CCA)		Page Number
Existing	Modified	Existing	Modified	
MG5SDCBAT303	MG5SDCBAT301	Theory Total Marks:30 Assessment Methods: Oral Presentation, Written Test, Assignment, In class Discussion	Theory Total Marks:25 Assessment Methods: Oral Presentation, Written Test, Assignment, In class Discussion Practical: Total Marks: 15 Assessment Methods: Viva, Practical Assignment	143 147

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Commercial Enterprises
Course Code: MG5SECBAT300
Semester:V

Course Outcomes (CO No in the Table)		Page Number
Existing	Modified	
4	3	149

Programme: B.Voc. (Honours) Agriculture Technology

Course Code		**Course Name**		**Page Number**
Existing	Modified	Existing	Modified	
MG5MPCBAT300	No change	Principles of Agribusiness Management	Renewable Energy and Green Technology	159
MG6SDCBAT301	MG6SDCBAT300	Disease Management in		

		Commercial Crops	No change	166
MG6MPCBAT300	No change	Entrepreneurship Development	Agropreneurship Development	

Programme: B.Voc. (Honours) Agriculture Technology

Course Name: Communication and Agricultural Extension system

Course Code: MG6SDEBAT300

Semester:6

Total Hours		End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	Existing	Modified	
60	75	2 hr	1.5 hr	167 170

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Farming System Approach for Sustainable Crop Production
Course code: MG6SDEBAT301
Semester:6

End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	
2 hr	1.5 hr	176

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Disease Management in Commercial Crops
Course code: MG6SDCBAT300
Semester:6

End Semester Evaluation(ESE) Duration of Examination		Page Number
Existing	Modified	
2 hr	1.5 hr	182

Programme: B.Voc. (Honours) Agriculture Technology
Course Name: Entrepreneurship Development
Course code: MG6SECBAT300
Semester:6

Course Outcomes (CO)

CO No.	Expected Course outcome	Learning Domains	PO No	Page No
1				

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2	No Change	185
3		
4	Remove CO No. 4	

Programme: B.Voc. (Honours) Agriculture Technology

Course Code		Course Name		Page Number
Existing	Modified	Existing	Modified	
MG6MPCBAT300	No change	Entrepreneurship Development	Agropreneurship Development	197

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SEMESTER : 3

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Mahatma Gandhi University

Kottayam

Faculty/ Discipline	**Science**				
Programme	**B.Voc Agriculture Technology(Honours)**				
Course Name	**PRINCIPLES AND PRACTICE OF ORGANIC AGRICULTURE**				
Type of Course	MPC				
Course Code	**MG3MPCBAT204**				
Course Level	200-299				
Course Summary	This course provides knowledge on various concepts in organic Agriculture ,organic certification and develop skills in pest and disease management.				
Semester	3	**Credits**		4	**Total Hours**
Course Details	**Learning Approach**	**Lecture**	**Practical**	**OJT**	
		3	1	0	75
Pre-requisites, if any	NIL				

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COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains	PO No
1	Choose the core principles of organic agriculture and traditional farming methods.	K	1,2,3,4,5, 6,7,8,9,1 0
2	Explain the concepts of organic farming in the field.	U	1,2,3,4,5,6,7,8,10
3	Utilize knowledge of disease and pest management techniques.	A	1,2,3,5,8, 9,10
4	Discover the significance of national organisations and initiatives for organic farming.	An	1,2,3,6,8, 9

CO-PO ARTICULATION MATRIX

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	2	1	1	1	1	2	1	2	2
1CO 2	2	2	1	1	1	2	1	1	0	1
CO 3	2	1	1	0	1	0	0	1	1	1
CO 4	1	1	1	0	0	1	0	1	1	0

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

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COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	**Organic Agriculture and Soil Health Management**		**16**	
	1.1	Foundational concepts of organic Agriculture Principles of Organic Agriculture (Health, Ecology, Fairness, Care), Differences between conventional, organic, and regenerative agriculture systems	6	1
	1.2	Alternative farming methods, such as home farming, organic farming, permaculture, natural farming, biodynamic farming, and others , restrictions	6	1
	1.3	The Soil Food Web: Bacteria, fungi, mycorrhizae, and macro-organisms Techniques for building soil organic matter (SOM) and enhancing microbial activity	4	1
2	**Crop Production and Ecological Protection**		**17**	

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	2.1	On-farm fertility management: Composting methods Green manuring, and nitrogen-fixing legumes , Organic ecosystem concepts; role of organic matter; soil biological properties; use of farmyard manure, vermicompost, Bio-fertilizers	5	2
	2.2	Designing multi-year crop rotations (balancing nutrient-demanding and nitrogen-fixing crops) Choice of resilient crops and varieties, intercropping and types , cover crops, and mulching.	5	2
	2.3	Biological control agents, bio-rational pesticides, botanicals (neem products), trap crops, and traditional preparations (e.g., panchagavya, jeevamrutha).	4	2
	2.4	Beneficial insects their importance, predator, parasitoids, insect pathogens	3	2
	Cultivation practices , organic Certification, and Marketing		**12**	
	3.1	Fertilization , Foliar fertilization-solid fertilization, Methods of application of fertilizers to plants- Basal application, broadcasting, side-dressing,	3	3

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3		foliar spraying, and fertigation (drip/sprinkler systems).		
	3.2	Operational structure of the National Programme for Organic Production (NPOP); inspection, certification process, labelling, marketing, and export potential of organic produce.	3	3
	3.3	Marketing and export possibilities; socioeconomic effects. The National Program for Organic Production's (NPOP) operational framework Operational structure of NPOP; Certification process and standards of organic farming; Processing, leveling, economic considerations and viability, marketing and export potential of organic products.	6	3
4	**Practical**		**30**	
	4.1	Visit of organic farms to study the various components and their utilization	10	4
	4.2	Preparation of vermicompost and bio traps	8	4

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	4.3	Preparation of bio-pesticides	12	4
5	**Teacher specific**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture Field visit Seminars discussion
Assessment Types	**MODE OF ASSESSMENT**
	A.Continuous Comprehensive Assessment (CCA) **Theory** Total Marks :25 Assessment Methods: Oral presentations, Written test,Assignments,Class discussions **Practical** Total Marks :15 Assessment Methods :Viva,Practical,Assignment
	B. End Semester Evaluation (ESE) **Theory** Total Marks: 50 Assessment Methods Written Exam Duration of Examination :1.30 hr Pattern of examination for Theory :Non-MCQ

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	Different parts of written examination :Part A, Part B, Part C Answer Type :Short answer, Short Essays, Essays Marks for part :2,5,15 Number of questions in each part :7,7,2 Number of questions to be answered :5,5,1 Marks for parts: Part A-Short Answer-(5 out of 7)-(5*2=10) Part B-Short Essay-(5 out of 7)-(5*5=25) Part C-Essay-(1 out of 2)-(1*15=15) **Practical** Total Marks: 35 Assessment Methods :Exam-25 Record -5 Viva-5 Duration of Examination :1 hr

References

1. Ananthakrishnan, T.N. (ed.) 1992. Emerging Trends in Biological Control of Phytophagous insects. Oxford&IBH, New Delhi.
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10. Veeresh, G.K., Shivashankar, K. and Singlachar, M.A. 1997. Organic Farming and Sustainable Agriculture, Association for Promotion of Organic Farming, Bangalore.
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Suggested Readings

1.Palaniappan, S. P., & Annadurai, K. (2006). Organic farming: Theory and practice. Scientific Publishers. 2. Lampkin, N. H. (1990). Organic farming. Farming Press Books.. 3.Reddy, S. R. (2010). A textbook of organic farming. Kalyani Publishers.. 4. Bhattacharyya, P., & Chakraborty, G. (2005). Organic farming in India: Problems and

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processing. https://www.ifoam.bio

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SEMESTER :4

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Mahatma Gandhi University

Kottayam

Faculty/ Discipline	**Science**				
Programme	**B.Voc Agriculture Technology(Honours)**				
Course Name	**PRODUCTION TECHNOLOGY FOR ORNAMENTAL CROPS, VEGETABLES AND LANDSCAPING**				
Type of Course	MPC				
Course Code	**MG4MPCBAT200**				
Course Level	200-299				
Course Summary	This course provides knowledge on various concepts Ornamental crops and their cultivation, vegetable cultivation and landscaping.				
Semester	4	**Credits**		4	**Total Hours**
Course Details	**Learning Approach**	**Lecture**	**Practical**	**OJT**	
		3	1	0	75
Pre-requisites, if any	NIL				

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COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains	PO No
1	Identify the importance of ornamental crops and Production technology	K	2,4,6,9,10
2	Summarize production, cultivation, management, and post-harvest handling of vegetable crops.	U	1,2,3,4,5,6,8,9
3	Discover the designing and laying out of a landscape and different types and features of garden	A	1,2,3,4,5,6,9
4	Illustrate the cultivation of ornamental plants. Nursery bed preparation and seed sowing	An	1,2,3,5,6,9

CO-PO ARTICULATION MATRIX

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	**0**	**1**	**0**	**2**	**0**	**2**	**0**	**0**	**1**	**1**
CO 2	**2**	**1**	**1**	**1**	**2**	**1**	**0**	**1**	**1**	**1**
CO 3	**2**	**1**	**1**	**1**	**2**	**2**	**0**	**0**	**1**	**1**
CO 4	**1**	**1**	**1**	**0**	**1**	**1**	**0**	**0**	**1**	**1**

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	ornamental crops		**9**	
	1.1	Importance and scope of ornamental crops, economic value ornamental crops	3	1

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	1.2	Production technology of rose, gladiolus , jasmine , periwinkle, chrysanthemum under open conditions.	6	1
2	Introduction to Vegetables		**18**	
	2.1	Introduction - Importance and scope of vegetable crops Nutritional importance	5	2
	2.2	, Classification of vegetables - types of classification and their bases - Botanical, cultural, thermo classification. Classification based on parts used.	11	2
	2.3	Factors Affecting Vegetable Production	2	2
3	**Landscaping**		**18**	
	3.1	Importance and scope of landscaping. Principles of landscaping, elements of landscape designs	7	3
	3.2	Care and Maintenance of plants in landscape: Planting and maintenance of plants in the landscape	7	3
	3.3	Methods of irrigation . Methods of application of fertilizers to garden plants	4	3

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4	**Practical**		**30**	
	4.1	Identification of Ornamental plants	6	4
	4.2	Nursery bed preparation and seed sowing. Training and pruning of Ornamental plants.	12	4
	4.3	Harvesting handling of cut and loose flowers. Visit to commercial landscape unit.	12	4
5	**Teacher specific**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture Field visit Seminars discussion
Assessment Types	**MODE OF ASSESSMENT**

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	A.Continuous Comprehensive Assessment (CCA) **Theory** Total Marks :25 Assessment Methods: Oral presentations, Written test,Assignments,Class discussions **Practical** Total Marks :15 Assessment Methods :Viva,Practical,Assignment
	C. End Semester Evaluation (ESE) **Theory** Total Marks: 50 Assessment Methods Written Exam Duration of Examination :1.30 hr Pattern of examination for Theory :Non-MCQ Different parts of written examination :Part A, Part B, Part C Answer Type :Short answer, Short Essays, Essays Marks for part :2,5,15 Number of questions in each part :7,7,2 Number of questions to be answered :5,5,1 Marks for parts: Part A-Short Answer-(5 out of 7)-(5*2=10) Part B-Short Essay-(5 out of 7)-(5*5=25) Part C-Essay-(1 out of 2)-(1*15=15) **Practical** Total Marks: 35

	Assessment Methods :Exam-25 Record -5 Viva-5 Duration of Examination :1 hr

References

1. Kumar, N. (1990). Introduction to horticulture. Rajalakshmi Publications.
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Suggested Readings

1. Motloch, J. L. (2001). Introduction to landscape design (2nd ed.).
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SEMESTER : 5

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Mahatma Gandhi University

Kottayam

Faculty/ Discipline	**Science**				
Programme	**B.Voc Agriculture Technology(Honours)**				
Course Name	**Renewable energy and green Technology**				
Type of Course	MPC				
Course Code	**MG5MPCBAT300**				
Course Level	200-299				
Course Summary	The course focuses on mitigating environmental degradation, reducing carbon footprints, and replacing fossil fuels with clean, infinite energy alternatives				
Semester	5	**Credits**		4	**Total Hours**
Course Details	**Learning Approach**	**Lecture**	**Practical**	**OJT**	
		3	1	0	60
Pre-requisites, if any	NIL				

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COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains	PO No
1	compare conventional and non-conventional energy sources	K	1,2,3,4,5, 6,7,8,9,10
2	Assess the performance of solar photovoltaic systems, solar thermal devices, and wind energy conversion systems	U	1,2,3,4,5,6,7,8,10
3	Apply green technology principles to energy auditing, sustainable agriculture.	A	1,2,3,5,8, 9,10
4	Analyse and explain the principles, operation, and maintenance of biogas plants	An	1,2,3,6,8, 9

CO-PO ARTICULATION MATRIX

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	2	1	1	1	1	2	1	2	2
1CO 2	2	2	1	1	1	2	1	1	0	1
CO 3	2	1	1	0	1	0	0	1	1	1
CO 4	1	1	1	0	0	1	0	1	1	0

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

COURSE CONTENT

Content for Classroom transaction (Units)

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Module	Units	Course description	Hrs	CO No.
1	**Fundamentals of Renewable Energy**		**12**	
	1.1	Concept , importance and scope of renewable energy	2	1
	1.2	Nonrenewable vs. renewable sources of energy	2	1
	1.3	Solar, wind, biomass, hydropower and geothermal energy	3	1
	1.4	-Energy conservation and energy efficiency and Energy requirements in agriculture	3	1
	1.5	Renewable energy potential in India and Kerala	2	1
2	**Biomass, Biogas and Bioenergy**		**17**	
	2.1	Biomass: sources, types and characteristics	3	2
	2.2	Biogas plants and their components	2	2
	2.3	Use of biogas for cooking, heating and electricity	3	2
	2.4	Biofuels: biodiesel, bioethanol and biogas	2	2
	2.5	Energy generation from animal wastes and crop residues	4	2
	2.6	Biochar and its agricultural applications	3	2
	Solar and Wind Energy in Agriculture		**15**	
	3.1	Fundamentals of solar energy and solar radiation	3	3

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3	3.2	Solar photovoltaic (PV) systems	2	3
	3.3	Solar thermal systems	2	3
	3.4	Solar water pumping for irrigation	3	3
	3.5	Solar dryers and solar crop drying	2	3
	3.6	Solar greenhouse and protected cultivation applications	3	3
4	**Green Technology and Sustainable Agriculture**		**16**	
	4.1	Concept and principles of green technology and green buildings and energy-efficient farm structures	4	4
	4.2	Sustainable water and energy management	2	4
	4.3	Rainwater harvesting and water conservation	2	4
	4.4	Precision agriculture and smart energy management	2	4
	4.5	Carbon footprint, carbon sequestration and climate-smart agriculture	3	4
	4.6	Green technology applications for sustainable agricultural development	3	4
5	**Teacher specific**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture Field visit

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	Seminars discussion
Assessment Types	**MODE OF ASSESSMENT**
	A.Continuous Comprehensive Assessment (CCA) **Theory** Total Marks :30 Assessment Methods: Oral presentations, Written test,Assignments,Class discussions
	B. End Semester Evaluation (ESE) **Theory** Total Marks: 70 Assessment Methods Written Exam Duration of Examination :2 hr Pattern of examination for Theory :Non-MCQ Different parts of written examination :Part A, Part B, Part C Answer Type :Short answer, Short Essays, Essays Marks for part :2,5,15 Number of questions in each part :12,6,4 Number of questions to be answered :10,4,2 Marks for parts: Part A-Short Answer-(10 out of 12)-(10*2=20) Part B-Short Essay-(4 out of 6)-(4*5=20) Part C-Essay-(2 out of 4)-(2*15=30)

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Reference

1. Sukhatme, S. P., & Nayak, J. K. (2017). *Solar Energy: Principles of Thermal Collection and Storage* (4th ed.). McGraw Hill Education.

2. Rai, G. D. (2011). *Non-Conventional Energy Sources* (5th ed.). Khanna Publishers.

3. Twidell, J., & Weir, T. (2021). *Renewable Energy Resources* (4th ed.). Routledge.

4. Khan, B. H. (2018). *Non-Conventional Energy Resources* (3rd ed.). McGraw Hill Education.

5. Patel, M. R. (2021). *Wind and Solar Power Systems: Design, Analysis, and Operation* (3rd ed.). CRC Press.

6. Kubba, S. (2016). *Green Construction Project Management and Cost Oversight* (2nd ed.). Architectural Press.

Suggested Readings

1. *Renewable Energy Resources (4th Edition)* by John Twidell and Tony Weir

2. Biomass Gasification and Pyrolysis: Practical Design and Theory by Prabir Basu

3. *Green Building: Principles and Practices in Residential Construction* by Carl DeBono

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SEMESTER :6

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Mahatma Gandhi University

Kottayam

Faculty/ Discipline	**Science**				
Programme	**B.Voc Agriculture Technology(Honours)**				
Course Name	**Agropreneurship Development**				
Type of Course	MPC				
Course Code	**MG6MPCBAT300**				
Course Level	200-299				
Course Summary	This course helps to understand the the students about Agri entrepreneurs and different classifications and general awareness about identification of project financing new enterprises				
Semester	6	**Credits**		4	**Total Hours**
Course Details	**Learning Approach**	**Lecture**	**Practical**	**OJT**	
		3	1	0	60
Pre-requisites, if any	NIL				

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COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains	PO No
1	Identify and evaluate lucrative business opportunities within the agricultural and allied sectors chains.	K	1,2,3,4,5,6,7,9,10
2	Develop a comprehensive agribusiness plan, including financial forecasting, market analysis,	U	1,2,3,4,56,9,10
3	Navigate institutional support systems by identifying government schemes, subsidies.	A	1,2,3,4,56,9,10
4	Analyse modern agricultural technologies and value-addition techniques	An	1,2,3,4,56,9,10

CO-PO ARTICULATION MATRIX

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	2	2	3	3	2	1	0	3	3
1CO 2	3	3	2	2	2	2	0	0	3	3
CO 3	1	2	2	3	1	1	0	0	2	3
CO 4	2	2	2	3	3	2	0	0	3	3

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COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	**Entrepreneur and Entrepreneurship**		**17**	
	1.1	Definition, Characteristics and functions of an Entrepreneur	4	1
	1.2	Classification of entrepreneur	3	1
	1.3	Entrepreneurship	2	1
	1.4	Role of entrepreneurs in India	4	1
	1.5	Role of entrepreneurs in India	2	1
	1.6	Agripreneurship-Scope and its importance	2	1
2	**Agribusiness organisations**		**17**	
	2.1	Agribusiness-Concept, importance	3	2
	2.2	Curriculum for EDP	2	2
	2.3	Joint stock company and partnership	3	2
	2.4	Small business enterprise and its features	4	2
	2.5	Institutions supporting small business enterprise	3	2
	2.6	Sickiness in small business enterprise	2	2

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3	**-Entrepreneurship Development Programme**		**13**	
	3.1	EDP- Scope and importance	3	3
	3.2	Curriculum for EDP	3	3
	3.3	-Phases of EDP	3	3
	3.4	Institutions supporting EDP	2	3
	3.5	Problems of EDP	2	3
4	**Agricultural projects**		**13**	
	4.1	Agricultural projects and its classification	3	4
	4.2	Risks in Agricultural Projects	3	4
	4.3	Project life cycle	2	4
	4.4	Project report-contents	2	4
	4.5	New product development	3	4
5	**Teacher specific**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture Field visit Seminars discussion
Assessment Types	**MODE OF ASSESSMENT**

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	A.Continuous Comprehensive Assessment (CCA) **Theory** Total Marks :30 Assessment Methods: Oral presentations, Written test,Assignments,Class discussions
	B. End Semester Evaluation (ESE) **Theory** Total Marks: 70 Assessment Methods Written Exam Duration of Examination :2.00 hr Pattern of examination for Theory :Non-MCQ Different parts of written examination :Part A, Part B, Part C Answer Type :Short answer, Short Essays, Essays Marks for part :2,5,15 Number of questions in each part :12,6.4 Number of questions to be answered :10,4,2 Marks for parts: Part A-Short Answer-(10 out of 12)-(10*2=20) Part B-Short Essay-(4 out of 6)-(4*5=20) Part C-Essay-(2 out of 4)-(2*15=30)

Reference

1. Akridge, J. T., Foltz, J. C., Yeager, E. A., Brewer, B. E., & Malone, T. (2022). *Agribusiness Management* (7th ed.). Routledge.

2. Pandey, V. (2024). *Agri-Entrepreneurship: Theory, Practice, and Development*. Amazon Kindle/Independent Publisher.

3. Gupta, L., Vyas, R., Sharma, S. K., Gupta, S., & Kumar, A. (2022). *A Handbook of Agricultural Entrepreneurship*. IBP Books.

4. Chole, R. R., Kapse, P. S., & Deshmukh, P. R. (2012). *Entrepreneurship Development and Communication Skills*. Scientific Publishers

5. Singh, P., Sharma, J. P., Burman, R. R., & Kumbhare, N. V. (Eds.). (2018). *Entrepreneurship Development in Agriculture*. Post Graduate School, IARI.

Suggested Readings

1.*A Textbook on Agricultural Entrepreneurship* by M. Kadam

2. *Fundamentals of Entrepreneurship* by S. Mohanty

3. Management Skills for Successful Agri Entrepreneurs by B. Poongodi

4. *Entrepreneurship to Agripreneurship: Extension, Innovation and Rural Enterprise Development in Agriculture* (New Delhi Publishers)

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