

MASTER OF RURAL STUDIES
THE FOLLOWING ARE THE SUBJECTS PRESCRIBED FOR
SEMESTER-I

Sr No.	Course Code	Course Category	C	IM	EM	TM	Course Title
1	16070102010100	Foundation-1	2	30	70	100	Rural Technology
2	16070202010200 16070202010300 16070202010400 16070202010500 16070202010600	Core-1	2 2 2 2 2	30 30 30 30 30	70 70 70 70 70	100 100 100 100 100	1.Agronomy-1 2. Horticulture & Forestry -1 3.Animal Husbandry-1 4.Rural Extension-1 5. Rural Economics-1
3	16070302010700 16070302010800 16070302010900	Elective-1	2 2 2	30 30 30	70 70 70	100 100 100	1. Water Resource Management 2. Pomology 3. Philosophy and Contents of Extension
4	16070402011000 16070402011100 16070402011200	Elective-2	2 2 2	30 30 30	70 70 70	100 100 100	1.Concept of social reconstruction 2.Rural development in India 3.Olericulture
5	16070502011300 16070502011400 16070502011500	Elective-3	2 2 2	30 30 30	70 70 70	100 100 100	1. Natural Recourses and Management 2.Sociology of Tribal Society 3.Reproduction in Farm Animals

Faculty of Rural Studies

Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Foundation-1	16070102010100	Rural Technology	2	30	50	20	2.5 Hrs

Title: Rural Technology

Objectives:-

1. Student aware with knowledge of resources in rural area
2. Student aware with voluntary organization so can use in his area development program

Course: **100%**

Unit 1 Energy resources 30%

- 1.1 Energy Crisis
- 1.2 Conventional and non-conventional sources of energy.
- 1.3 Non conventional: Bio-Gas energy, Solar Energy, Wind Energy, Waves and tides, their development and utilization.
- 1.4 Energy saving in kitchen.

Unit 2 Farm implements (in brief) 20%

- 2.1. Spray pump
- 2.2. Harrow
- 2.3. Plough
- 2.4. Loan mover
- 2.5. Dibbler
- 2.6. Spade
- 2.7. Potato digger
- 2.8. Rotavator etc.

Unit 3 Green House technology 15%

- 3.1 Importance, Scope &Types,
- 3.2 Cultivation in green house: a. Rose b. Carnation c. Lilies d. Chrysanthemum
e. Gerbera

Unit 4 Use of Plastic in Horticultural Crop	20%
4.1 Plastic Bag in nursery.	
4.2 Mulching	
4.3 Pipe Line	
4.5 Drip and Sprinkle irrigation.	
4.6 Packing and Storage in fruit and flower.	
4.7 Plastic House / Green House.	

Unit 5 Nursery in Rural Area	15%
5.1 Fruit	
5.2 Flower	
5.3 Forest Tree	
Selection of place, land preparation, aftercare, Marketing	

References

- (1) “ Fal ane Ful ” (Gujrati edition- march 2015)
pub.: Directore of extension education, J. A.U.– Junagadh.
- (2) “ Falpako ” (Gujrati edition- march 2013)
pub.: Directore of extension education, A. A. U., Anand
- (3) “ Fal visheshank ” (Gujrati edition)
pub.: “Krushigovidya”, Anand Kendra, (G.A.U.) – Anand

Faculty of Rural Studies

Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Core-1	16070202010200	Agronomy-1	2	30	50	20	2.5 Hrs

Title: Research Design in Agriculture

Objectives:-

1. Students should know about the selection of site for experiments and uniformity trials
2. To aware the students about principles of experimental design
3. Students should be aware about the simple design of experiments
4. Students should know the methods and preparation of questionnaire.
5. The student should aware about to collect the sample, methods of sampling from the field and its analysis.

Theory:-

Unit:-1 Questionnaire: - 15%

- 1.1 Definition and meaning of questionnaire
- 1.2 Characteristics of questionnaire
- 1.3 Merits of demerits of questionnaire
- 1.4 kinds of questionnaire

Unit:-2 Sampling :- 15%

- 2.1 What is sampling
- 2.2 Importance of sampling
- 2.3 Methods of sampling

Unit:-3 Some important definitions used in field experiments, design and principles of field experiments. 20%

Unit:-4 Field experimental design: - 40%

- 1.1 Aims and classification of experimental design and uniformity trials
- 1.2 Simple designs of experiments
 - 1.2.1 Paired design of experiment
 - 1.2.2 Completely Randomized Design
 - 1.2.2 Randomized Block Design
 - 1.2.3 Latin Square Design

Unit:-5 Care to be taken during field experiments 10%

References:-

1. “*Kshetra Prayog ni Karya Paddhati*” (Gujarati Edition)
 - Dr. Ambalal Sendhabhai Patel & Shri Mahesh Ramnikbhai Vaishnav
2. Agricultural Statistics in India
 - P.C.Bansil
3. Field Experimental Deisng.
 - Chandel R.S.
4. “*Samajik Sansodhan Paddhatio*” (Gujarati Edition)
 - A.G. shah & J.K. Dave

Faculty of Rural Studies

Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Core-1	16070202010300	Horticulture & Forestry	2	30	50	20	2.5 Hrs

Title: Fruit production

Objectives:

- (1) Student gets knowledge about recent production technology in fruits.
- (2) To know the principal of fruit production so useful in progressive farming.
- (3) Create self - employment source.

Theory: -

(100%)

Unit: 1 Defination, importance, scope, and problems of fruits (10 %)

Unit: 2 Planting (20 %)

- Caren at the time of plantings
- Land preparation at the time planting
- Sowing distance

Unit: 3 Varietal characteristic of fruits (20%)

Unit: 4 After care in fruit crops (25 %)

- Training and pruning in fruit
- Fertilizer requirement
- Weed and weed management
- Treatment of “Bahar”

Unit: 5 Integrated pest management in fruit crops. (25%)

References

- (1) “ Fal ane Ful ” (Gujrati edition- march 2015)
pub.: Directore of extension education, J. A.U.– Junagadh.
- (2) “ Falpako ” (Gujrati edition- march 2013)
pub.: Directore of extension education, A. A. U., Anand
- (3) “ Fal visheshank ” (Gujrati edition)
pub.: “Krushigovidya”, Anand Kendra, (G.A.U.) – Anand

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Core-1	16070202010400	Animal Husbandry-1	2	30	50	20	2.5 Hrs

Title: Animal Genetics & Breeding

Objectives:

- (1) To understand the underlying truth of heritability and its application.
- (2) To know the importance of breeding for improvement of animals.
- (3) To get familiar with selection methods and to apply in practice.
- (4) To understand the importance of reproduction in profitability of animal husbandry.
- (5) To know various reproductive problem and how to overcome form them.
- (6) To know how one could help to villagers for improvement of their animals.

Unit-1: **20%**

- 1.Laws of Heritability: Mendel's experiment on peas and laws.
- 2.Selection: A tool to a breeder for improvement

Unit-2: **20%**

- 1.Variation and Traits: Sources, effects and Implications of variation
- 2.Choosing a trait for selection: affecting factors, degree of relationship

Unit-3 **20%**

- 1.Methods of Breeding and Their merits & demerits
- 2.Animal Selection: Methods, Their merits and demerits

Unit-4 **20%**

- 1.Fertility affecting breeding efficiency and measures to promote breeding efficiency
- 2.Selection criteria for breeding bulls at puberty and at adulthood

Unit-5 **20%**

- 1.Heat Detection and Maintenance of Reproductive Cycle in summer.
- 2.Pregnancy Diagnosis: Importance and Methods.

Reference Books:

1. Pashumadarog and Prasutivigyan Part - 1, 2, 3
- S. B. Kodagali, B. K. Bhavsar
2. Pashu Samvardhan - R. K. Shukal
3. A Text Book of Animal Husbandry - G. C. Banerjee.
4. Animal Genetics and Breeding - BAIF

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Core-1	16070202010500	Rural Extension-1	2	30	50	20	2.5 Hrs

Title: ગ્રામ વિકાસનો ઈતિહાસ

હેતુઓ:-

- (૧) વ્યક્તિગત અને સમુહને લોકોને મદદ કરવા તૈયાર કરવા.
- (૨) સરકારી યોજના અને કાર્યક્રમો વિશે વિદ્યાર્થી જાગ્રત કરવા.
- (૩) ગ્રામ વિકાસના બધાજ પરિબળો માટે વિદ્યાર્થીને જાગ્રત કરવા.
- (૪) સ્વૈચ્છીક સંસ્થાઓ માટે વિદ્યાર્થીને જાગ્રત કરવા.

અભ્યાસક્રમ

- એકમ :- ૧** ગ્રામ વિકાસનો ખ્યાલ ગ્રામ વિકાસના કાર્યો ગ્રામ વિકાસનો ઈતિહાસ, અને ગ્રામ વિકાસના હેતુઓ. ૨૦ %
- એકમ :- ૨** ગ્રામ વિકાસની સંસ્થાઓ (એજન્સીઓ) ૨૦ %
૧. D.R.D.A.
 ૨. સહકારી સંસ્થાઓ.
 ૩. ટ્રાયસેમ.
 ૪. આદિવાસી યોજનાઓ.
- એકમ :- ૩** વ્યક્તિગત અને સામૂહાયિક વિકાસ માટેની યોજનાઓ. ૨૦ %
૧. SGSY
 ૨. નારેગા.
 ૩. વોટરશેડ.
 ૪. ગોકુળ ગ્રામ યોજના.
- એકમ :- ૪** ગ્રામ વિકાસમાં NGO નો ફાળો, કાર્યો, વિભાવના તથા તેનું કાર્યક્ષેત્ર. ૨૦ %
- એકમ :- ૫** ગ્રામ વિકાસમાં સહકારીક્ષેત્ર જેમાં યુવાનો, મહિલાઓ અને ખેડૂતોનો રોલ તથા સરકારી બેંકોની કામગીરી. ૨૦ %

સદર્ભ ગ્રંથો:-

૧. ભારતની સામાજિક સંસ્થાઓ - પ્રો શાહ / જોષી
૨. ગ્રામ વિકાસ - લે. બાબુભાઈ અવરાણી.
૩. ભારત ગરીબી - લે. રોહિત શુક્લા.
૪. કૃષિ અર્થશાસ્ત્ર - સીદત / વ્યવહાર.

Faculty of Rural Studies

Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Core-1	16070202010600	Rural Economics-1	2	30	50	20	2.5 Hrs

Title: Agriculture Economics.

Objectives:

1. To know Basic Issue Of Agriculture Economics.
2. To Know About Cropping pattern.
3. To Know About Agri. Credit Structure
4. To Familiarise Student With Policy issue That are relevant to Indian agri. Ecomics & enable then to analyze the issue.

UNIT-1 The place of agriculture in the national economy 20%

Agriculture growth since independence
agri. productivity, causes of low Productivity, measures.

UNIT-2. land use and cropping pattern in India since.1951 factors affecting cropping pattern.20%

UNIT-3 Agriculture inputs, progress & limitations - irrigation, fertilizers and manures, seeds, soil conservation and reclamation. animal husbandry and dairy development. 20%

UNIT-4. size of farms and productive efficiency - the meaning of Economic holding, size pattern of operational holding, farm size, productivity/profitability & farm efficiency. The problem of sub division and fragmentation of holding - causes and remedies 20%

UNIT-5.sources of credit for Indian farmers – institutional and non-institutional credit, importance of institutional credit, co-operative finance- structure, achievement and limitations. 20%

References:

1. A.N.Agrawal/ Kundanlal-Agricultural problems in India,-Vikash Pub. House
2. Ruddar Datt & KPM Sundharam-Indian Economy,- S.Chand & Co. Ltd. N. Delhi
3. Sadhu & Singh- Agriculture Problems in India,- Himalaya Pub. House, Mumbai
4. L. K. Wader & C. Murphy- Agri. Marketing And Co-operation, Indian Council of Agri. Res.
5. Bilgrami SAR – An Introduction To Agri. Economics, Himalaya Pub. House, Mumbai

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-1	16070302010700	Water Resource Management	2	30	50	20	2.5 Hrs

Title :- Water Resource Management

Objectives :-

1. Student should know theoretically as well as practically about water conservation.
2. Student should be aware about works done in Water Resource Management.
3. To know about the Water saving irrigation method.

Theory :

100%

Unit : 1 Introduction to water Resource Management.

25 %

- 1.1 Best development of Resource Management proper use and management of water Resource.
- 1.2 Aspect of Water Resource Management.
- 1.3 Role of various agencies in water resource management.

Unit : 2 Ground Water

25 %

- 2.1 Introduction.
- 2.2 Ground water importance and Present situation.
- 2.3 Use of Ground Water.
- 2.4 Limitation of usages of Ground Water.
- 2.5 Steps to Increase Ground Water.

Unit : 3 Watershed Management

15 %

- 3.1 Introduction.
- 3.2 Points kept in mind while selecting watershed site.
- 3.3 Type of development works under water shade treatment.
- 3.4 Terms related with watershed.
 - Self held group.
 - Use group.
 - Homogeneous group.
 - Watershed.
- 3.5 Characteristics of watershed.

Unit : 4	Water harvesting.	10 %
4.1	People's participation in watershed management.	
4.2	Necessity of rain water harvesting.	
4.3	Methods of rain water harvesting.	
	1. Check dam.	
	2. Percolation Tank.	
	3. Khet Talavadi.	
	4. Underground water storage.	
	5. Plantation tree.	
	6. Well recharge.	
	7. Bore recharge.	

Unit : 5	Advance Water Application Method	25 %
5.1	Function of irrigation water.	
5.2	Sprinkler irrigation system Classification of irrigation system Advantages of irrigation system Disadvantages of irrigation system	
5.3	Drip irrigation system. Part of Drip irrigation system. Advantages of drip irrigation system. Disadvantages of drip irrigation system.	
5.4	Visit to a farm and practical. Study of drip irrigation.	
5.5	Collect the information related to motivation of drip irrigation system about Government policy.	

References :-

1. Water resources management (Gujarati Edition) – Anil K. Popat
2. Manuals on Irrigation Agronomy – R. D. Misra and M. Ahmed
3. કુદરતી સંપત્તિ - વિકાસ અને વ્યવસ્થાપન - બાબુભાઈ અવરાણી
4. Rain water Harvesting – Arnold Racey.

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-1	16070302010800	Pomology	2	30	50	20	2.5 Hrs

Title: Pomology

Objectives:

- (1) Student gets knowledge about recent production technology in fruits.
- (2) To know the principal of fruit production so useful in progressive farming.
- (3) Create self - employment source.

Theory: -

100%

Unit: 1	Defination, impotence, scope, and problems of fruits	10 %
Unit: 2	Planting - Caren at the time of plantings - Land preparation at the time planting - Sowing distance	20 %
Unit: 3	Varietal characteristic of fruits	20%
Unit: 4	After care in fruit crops - Training and pruning in fruit - Fertilizer requirement - Weed and weed management - Treatment of “Bahar”	25 %
Unit: 5	Integrated pest management in fruit crops.	25%

References

- (1) “ Fal ane Ful ” (Gujrati edition- march 2015)
pub.: Directore of extension education, J. A.U.– Junagadh.
- (2) “ Falpako ” (Gujrati edition- march 2013)
pub.: Directore of extension education, A. A. U., Anand
- (3) “ Fal visheshank ” (Gujrati edition)
pub.: “Krushigovidya”, Anand Kendra, (G.A.U.) – Anand

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-1	16070302010900	Philosophy and Contents of Extension	2	30	50	20	2.5 Hrs

Title: Philosophy and Contents of Extension

હેતુઓ:-

- (૧) વિદ્યાર્થીઓ વિસ્તરણ શિક્ષણની મહત્વની બાબતો વિશે જાણે.
- (૨) વિદ્યાર્થીઓ વિસ્તરણ શિક્ષણનો ઇતિહાસ અને સિધ્ધાંતોથી પરિચિત બને.
- (૩) પરદેશની વિસ્તરણ સેવાઓથી માહિતગાર બને.
- (૪) ભારતીય ગ્રામીણ સમાજને સમજે.
- (૫) સામુદાયિક વિકાસ કાર્યકરનું કર્તવ્ય જાણે.

અભ્યાસક્રમ

એકમ :- ૧	વિસ્તરણ શિક્ષણ: ૧. વિસ્તરણ શિક્ષણના તત્વો. ૨. વિસ્તરણ શિક્ષણનું મહત્વ. ૩. વિસ્તરણ શિક્ષણનું કાર્યક્ષેત્ર.	૨૦ %
એકમ :- ૨	વિસ્તરણ શિક્ષણના સિધ્ધાંતો: ૧. વિસ્તરણ શિક્ષણનો ઇતિહાસ. ૨. વિસ્તરણ શિક્ષણ પ્રક્રિયાના સોપાન. ૩. વિસ્તરણ શિક્ષણનું તત્વજ્ઞાન.	૨૦ %
એકમ :- ૩	પરદેશમાં વિસ્તરણ શિક્ષણ સેવાઓ : ૧. અમેરીકા ૨. ફિલીપાઈન્સ. ૩. જાપાન ૪. બર્મા	૨૦ %
એકમ :- ૪	ભારતીય ગ્રામીણ સમાજ ૧. ભારતય ગ્રામરચના. ૨. ગ્રામ વ્યવસ્થાના પ્રકાર. ૩. જ્ઞાતિપ્રથા. ૪. ગ્રામ સમાજના લક્ષણો.	૨૦ %
એકમ :- ૫	સામુદાયિક વિકાસ કાર્યકરનું કર્તવ્ય : ૧. ભોમિયા તરીકે ૨. કાર્યસહાયક તરીકે ૩. નિષ્ણાંત તરીકે ૪. ચિકિત્સક તરીકે.	૨૦ %

સદર્ભ ગ્રંથો:-

૧. કૃષિ વિસ્તરણ શિક્ષણ - ઈશ્વરભાઈ પટેલ
૨. સામુદાયિક વિકાસ અને કૃષિ વિસ્તરણ - બાબુભાઈ અવરાણી
૩. વિસ્તરણ શિક્ષણના મુળતત્વો - પ્રો. ધીરજ ધકાન

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-2	16070402011000	Concept of Social Reconstruction	2	30	50	20	2.5 Hrs

Title: Concept of Social Reconstruction

Objectives:

હેતુઓ:-

- (૧) વિદ્યાર્થીઓ સમાજનવનિર્માણ વિશેનું જ્ઞાન પ્રાપ્ત કરે.
- (૨) વિદ્યાર્થીઓ ધર્મ, તત્વજ્ઞાન અને વિજ્ઞાનની સમજ કેળવે.
- (૩) વિદ્યાર્થીઓ ફ્રેચ અને અમેરીકન ક્રાંતિથી પરીચિત થાય.
- (૪) વિદ્યાર્થીઓ કાલમાર્ક્સ, અબ્રાહમ લીકન અને માર્ટીન લ્યુથરકિંગ વિશેનું જ્ઞાન પ્રાપ્ત કરે.

અભ્યાસક્રમ

- એકમ :- ૧** સમાજનવનિર્માણ એટલે શું? તે શા માટે જરૂરી છે? સમાજનવનિર્માણનું સ્વરૂપ અને ક્ષેત્ર ૨૦ %
- એકમ :- ૨** સમાજનવનિર્માણના સહાયક પરિબલોમાં ૨૦%
૧. ધર્મ - ધર્મ એટલે શું તેના ઉદભવના કારણો.
 ૨. તત્વજ્ઞાન - તત્વજ્ઞાનની વ્યાખ્યા અને લક્ષણો.
 ૩. વિજ્ઞાન - વિજ્ઞાનની વ્યાખ્યા અને લક્ષણો.
- એકમ :- ૩** ફ્રેચ અને અમેરિકન ક્રાંતિ તેના કારણો અને તેની અસરો સમાજ પૂન: નિર્માણની એક પ્રક્રિયાના ભાગરૂપે ક્રાંતિ ૨૦ %
- એકમ :- ૪** સત્તા દ્વારા સામાજિક ક્રાંતિ માર્ટીન લ્યુથરકિંગ જુનિયર, જહોન કેલ્વીન. ૨૦ %
- એકમ :- ૫** અબ્રાહમ લીકન અને કાલમાર્ક્સની ઉપયુક્તતા અને મૂલ્યાંકન. ૨૦ %

સદર્ભ ગ્રંથો:-

૧. વિશ્વનો ઇતિહાસ - ડૉ. ધારિયા
૨. સમુળી ક્રાંતિ - કિશોરલાલ મશરૂવાલા
૩. આપણો ધર્મ - ડૉ. આ.બા.ધૃવ
૪. સંશોધન પદ્ધતિઓ - ડૉ. એ.જી. શાહ અને જે. કે દવે
૫. ધર્મોનું મિલન - ડૉ. રાધાકૃષ્ણન
૬. ભારતીય તત્વજ્ઞાન - ડૉ. સી.વી. રાવળ
૭. જગતના ધર્મો - જે.એ યાજ્ઞિક

Faculty of Rural Studies

Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-2	16070402011100	Rural Development in India	2	30	50	20	2.5 Hrs

Title: Rural Development in India

Objectives:

Course:

100%

UNIT-I

20%

- Antiquity of the term Gramin (rural)
- The meaning the term development
- Rural life in India through the ages – Ancient India, Medieval India and Modern India.
- Impact of Modern World on Indian Rural Life in early 20 Century.
- Rural life in post independent India.

Unit-II

20%

- The ‘why’ of Rural Development in India.
- The dimensions and approaches of Rural Development.
- Indian Government Rural Development Administration and Approach.
- Plans and Schemes of Rural Development in India.

Unit-III

20%

- Characteristics of Indian Rural Life.
- Agricultural Scenario in Independent India.
- National Agriculture Policy
- Problems of Indian Agriculture.
- Experiments in Rural Development Planning – Nelokheri experiment, Firkka experiment, Itwa Pilot Project, Gurgaon Planning, Sri Niketan experiment.

UNIT-IV

20%

- Studies in Contemporary Models of Rural Development- Ralegaon experience, Tarun Bharat Gangh, SEWA, Chipko movement, Growth Centres, Krishi Vigyan Kendra, Gramodaya Model
- Christian Missionary experiments in tribal communities.

UNIT-V

20%

- Rural Reconstruction – ‘Gramin Punarachana’ – Its conceptual frame-work
- Rural Reconstruction in India

References:

1. An Introduction to Agricultural Economics - Bilrami SAR
2. Agricultural Problems in India - Sadhu and Sing
3. Rural Development - Sundharam I.S.
4. Indian Agricultural Economics - Rudra A

Faculty of Rural Studies

Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-2	16070402011200	Olericulture	2	30	50	20	2.5 Hrs

Title: Olericulture

Objectives:

- (1) Student gets knowledge about vegetable production
- (2) To know the principal of vegetable production so useful in progressive farming.
- (3) Create self - employment source.

Theory: -

100%

Unit: 1	Defination, importance, scope, and problems of vegetable growing	20 %
Unit: 2	Importance of Hybrid variety in vegetables	20 %
Unit: 3	Seedling and seed production in vegetables	20%
Unit: 4	Weed and weed management, Integrated pest management in vegetables.	20 %
Unit: 5	- Fertilizer requirement in vegetables. - Importance of plant growth regulator in vegetables	20%

References

- (1) “ Shakhaji vigan ” (Gujrati edition) – Babubhai Avarani.
- (2) “ Shakhaji pako ni kheti ” (Gujrati edition dec. -2013)
pub.: Directore of extension education, J. A.U., – Junagadh.
- (3) “ Shakhaji ” (Gujrati edition may-2009)
pub.: Directore of extension education, A. A. U., – Anand.

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-3	16070502011300	Natural Resources and management	2	30	50	20	2.5 Hrs

Title: Natural Resources Management

Objectives:

1. Students identify the environment and natural resources.
2. Students will become aware about different kinds of pollution.
3. Students understand the importance of energy.
4. Students become aware about the global problem of the environment laws.

Course: **100%**

Unit: - 1 Environment and natural resources. 20%

- 1.1 Definition of environment, Environment on the earth.
- 1.2 Definition cycles which keep the environment in balance.
- 1.3 Manmade and natural environment.

Unit: - 2 Pollution 15%

- 2.1 Definition of pollution, Types, Cause and effects.
- 2.2 effect of pollution on human life.

Unit: - 3 Major Elements of natural resources (water, soil, forest, air) 15%

- 3.1 Effect of polluted elements on global environment.
- 3.2 effect of natural disaster on public life.

Unit: - 4 Energy 15%

- 4.1 Definition of energy, types.
- 4.2 Merits and demerits of renewable sources of energy.

Unit: - 5 Natural resources 35%

- 5.1 Place and importance of natural resources of India.
- 5.2 Care of natural resources
- 5.3 "Eco-Friendly" Approach for conservation and protection of natural resources
- 5.4 Nation sanctuaries and natural parks.
- 5.5 Environmental laws.

5.5.1 The air act 1981

5.5.2 The Water act 1974

5.5.3 The Environment (protection act) 1986

Reference

1. Paryavaran sath. - Ramesh Savaliya
2. Environment and seismic engineering - Dr.M.B Gohil
3. Paryavaran shastra - Bipinbhai joshi
4. Paryavaran - Dr.M.B.Gohil
5. Chalo jagiyre paryavaran bachaviye - Dr.Rameshchandra J. Bhayani.
6. Kudarat Sampati vikat andvyavasthapan - Babubhai avarani

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-3	16070502011400	Sociology of Tribal Society	2	30	50	20	2.5 Hrs

Title: Sociology of Tribal Society

Objective:-

1. To study the sociology of tribal society
2. To Study the Economics classification of tribal
3. To know the problems of tribal society
4. To know about Tribal life style of Tribal Society.

Course:-

100%

Unit: - 1 Sociology of Tribal Society.

20%

- 1.1 Meaning, Concept, usefulness of Tribal Society.
- 1.2 Definition and character of schedule tribes.

Unit: - 2 Economic Classification of S.T

20%

Unit: - 3 Sociological and cultural outlines of S.T

20%

- 3.1 Forms of marriage
- 3.2 Status of women in tribal society
- 3.3 Religions beliefs and returns.
- 3.4 Dimensions of cultural.

Unit: - 4 Problems of tribes

20%

Poverty, dept, illiteracy and agriculture problems lifestyle of various

Unit: - 5 Introduction to Tribes in Gujarat

20%

-Bhil, Dubala, Sidi,

Reference:-

1. Adivasi Samajnu Samajshashtra- A G Shah and J K Dave
2. Gujaratna Adivasio_ Shah Vimal
3. Adivasiona Prashno_ Shah Vimal
4. Bhartiya Adivasi Samaj- A G Shah and J K Dave
5. Gujaratna Dubala_ P G Shah

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Name of Course	Semester	Core/ Elective/ Foundation	Course Code	Course Title	Credits	Internal marks	External marks	Practical/ viva marks	External exam time duration
M.R.S.	I	Elective-3	16070502011500	Reproduction in Farm Animals	2	30	50	20	2.5 Hrs

Title: Reproduction in Farm Animals

Objectives:

- (1) To understand Fertilization and Implantation
- (2) To understand Fetal Development and Parturition to understand the basic mechanism of Reproduction.
- (3) To understand How the Reproduction is involved in animal production.
- (4) To understand estrus cycle.
- (5) To know udder and milk secretion.

Course:

Unit-1 Reproductive System	30%
- Male Reproductive System: Organs	
- Female Reproductive System: Organs	
-	
Unit- 2 Hormones related to Reproduction.	10%
Unit- 3 Mechanism of Female Reproduction	20%
- Gametogenesis: Oogenesis, Spermatogenesis	
Unit- 4 Estrus Cycle and Ovulation	10%
Unit- 5 Mammary Gland and Milk Secretion	30%
- Structure and Functioning of udder.	
- Milk Secretion: Factors and Mechanism.	

Reference Books:

1. Pashumadarog and Prasutivigyan Part - 1, 2, 3
- S. B. Kodagali, B. K. Bhavsar
2. Pashu Samvardhan - R. K. Shukal
3. A Text Book of Animal Husbandry - G. C. Banerjee.
4. Animal Genetics and Breeding - BAIF